Docket No.
694231/0011
JJD:JFD

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: McFaddin et al. Group Art Unit: 2152

Application No.: 10/077,282 Examiner: Not Yet Assigned

Filed: February 14, 2002

For: **METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK**

Date: October 7, 2002

Commissioner for Patents
Washington, D.C. 20231

DECLARATION OF MICHAEL D. BIGBY IN SUPPORT OF AN INFORMATION DISCLOSURE STATEMENT ("IDS") DISCLOSING, IN ACCORDANCE WITH 37 CFR § 1.56, CIRCUMSTANCES OF A DISPUTE OVER INVENTORSHIP

I, MICHAEL D. BIGBY, hereby declare that:

1. I am a citizen of the United States, and an employee of Yahoo!, Inc., a corporation having offices at 701 First Ave., Sunnyvale, CA 94089, hereinafter referred to as "Yahoo!."

3. I make this Declaration to provide facts in accordance with the duty of disclosure under 37 CFR § 1.56.

4. This Declaration is being made based on my first-hand knowledge of the facts recited herein.

5. I conceived of the present invention during meetings I had with Justin P. Madison, who is also an employee of Yahoo!. The meetings, at which we conceived portions of the present invention, took place during the summer of 1999.

6. To write certain portions of the software code needed to deploy our invention, Yahoo! retained a third-party contractor, Travis James. Mr. James was asked to prepare a Functional Specification, or "White Paper" based on our ideas.

7. Mr. James, on or about September 7, 1999, completed and delivered to Yahoo! a "White Paper" describing and detailing certain aspects of the present invention that I, and Mr. Madison, had described to Mr. James. I understand that a copy of that "White Paper" is being submitted as Exhibit 1 to a Declaration of Justin P. Madison, also being filed concurrently herewith.

8. Subsequent to his preparation of the White Paper, while performing his work for Yahoo!, Mr. James in turn, hired another contractor, James E. McFaddin. Mr. McFaddin began working as a contractor for Yahoo! on the project incorporating my and Mr. Madison's invention.

9. Mr. McFaddin was later hired as a direct employee of Yahoo! I understand that a copy of Mr. McFaddin's employment agreement with Yahoo! is being attached as Exhibit 3 to a Declaration of Justin Madison, also being filed concurrently herewith.

10. Subsequently, I learned that Mr. McFaddin's employment at Yahoo! had been terminated, and that Mr. McFaddin was refusing to further aid in the preparation of a patent application directed to our invention. I was also informed that Mr. McFaddin was claiming to be the prior and sole inventor and sole owner of the claimed invention.

11. During his retention and employment at Yahoo!, I believe that Mr. McFaddin did contribute some inventive aspects to the claimed invention.

12. James DeCarlo, Yahoo!'s patent attorney, had telephonic discussions with me, along with Mr. Madison, wherein we discussed the concept of inventorship, as it pertains to the United States Patent Laws and Rules. After review of the parent application to this application, (Application Ser. No. 09/859,562), including the specification, drawings and claims, and the present application, which contains the same specification, drawings and claims, by me, Mr. DeCarlo, Mr. Madison, Mr. Bhargav Gade, and other employees of Yahoo!, I believe that the proper inventorship for the application has been determined. Specifically, it was determined that Mr. McFaddin is a joint inventor along with me and Mr. Madison. Mr. Gade, originally named as a co-inventor in the parent case (Application Ser. No. 09/859,562), was determined to not be a co-inventor, even though I understand he was named as a co-inventor with Mr. McFaddin at the time the parent application was filed. I understand that the documents needed to correct inventorship are being filed concurrently herewith.

13. Based on the above described investigation, I believe that inventorship is properly placed with Mr. McFaddin, Mr. Madison and myself.

14. Accordingly, for the reasons stated above, I believe that Mr. McFaddin is a joint inventor of the claimed invention, and that he made his contribution during the time of his retention and employment with Yahoo!. I do not believe that he is a sole inventor, nor do I believe that he is a sole prior inventor, nor an owner of the claimed invention.

15. I am disclosing Mr. McFaddin's unsubstantiated claim to be a sole and prior inventor, and sole owner, although I do not believe his claim to be true, out of an abundance of caution, in the unlikely event that Mr. McFaddin's unsubstantiated claim could be considered "information material to patentability" under the duty of disclosure as set forth in 37 CFR § 1.56.

I hereby declare that all statements made herein of my own knowledge are true; and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that willful false statements may jeopardize the validity of the application, any patent issuing thereon or any patent to which this verified statement was directed.

Dated: 10/30/02

Michael D. Bigby

Docket No.
694231/0011
JJD:JFD

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: McFaddin et al. Group Art Unit: 2152

Application No.: 10/077,282 Examiner: Not Yet Assigned

Filed: February 14, 2002

For: **METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK**

Date: October 7, 2002

Commissioner for Patents
Washington, D.C. 20231

DECLARATION OF JUSTIN P. MADISON IN SUPPORT OF AN INFORMATION DISCLOSURE STATEMENT ("IDS") DISCLOSING, IN ACCORDANCE WITH 37 CFR § 1.56, CIRCUMSTANCES OF A DISPUTE OVER INVENTORSHIP

I, JUSTIN P. MADISON, hereby declare that:

1. I am a citizen of the United States, and an employee of Yahoo!, Inc., a corporation having offices at 701 First Ave., Sunnyvale, CA 94089, hereinafter referred to as "Yahoo!."

3. I make this Declaration to provide facts in accordance with the duty of disclosure under 37 CFR § 1.56.

4. This Declaration is being made based on my first-hand knowledge of the facts recited herein.

5. I first conceived the present invention during meetings I had with Mr. Michael D. Bigby, who is also an employee of Yahoo!. The meetings, at which we conceived portions of the present invention, took place during the summer of 1999.

6. To write certain portions of the software code needed to deploy our invention, Yahoo! retained a third-party contractor, Travis James. Mr. James was asked to prepare a Functional Specification, or "White Paper" based on our ideas.

7. Mr. James, on or about September 7, 1999, completed and delivered to Yahoo! a "White Paper" describing and detailing certain aspects of the present invention that I, and Mr. Bigby, had described to Mr. James. A copy of that "White Paper" is being submitted as Exhibit 1 hereto.

8. Subsequent to his preparation of the White Paper, while performing his work for Yahoo!, Mr. James in turn, hired another contractor, James E. McFaddin. Mr. McFaddin began working as a contractor for Yahoo! on the project incorporating my and Mr. Bigby's invention, on or about September 20, 1999, along with Mr. James, both under my supervision. A copy of an invoice from the records of Yahoo!, which I believe to be the earliest invoice reflecting the work of Mr. McFaddin for Yahoo!, is attached hereto as Exhibit 2.

9. On or about December 2, 1999, Mr. McFaddin was hired as a direct employee of Yahoo!, to continue work on the Yahoo! product incorporating our invention. A copy of Mr. McFaddin's signed employment agreement with Yahoo! is attached hereto as Exhibit 3.

10. Subsequently, Mr. McFaddin's employment at Yahoo! was terminated. I learned that after his termination, contrary to the terms of his employment agreement, Mr. McFaddin was refusing to further aid in the preparation of a patent application directed to our invention, the preparation of which began while Mr. McFaddin was still a Yahoo! employee. I

was also informed that Mr. McFaddin was claiming to be the prior and sole inventor and sole owner of the claimed invention.

11. During his retention and employment at Yahoo!, I believe that Mr. McFaddin did contribute some inventive aspects to the claimed invention of the present application.

12. James DeCarlo, Yahoo!'s patent attorney, had personal and telephonic discussions with me and Mr. Bigby, and with Mr. Bhargav Gade, wherein he discussed the concept of inventorship, as it pertains to the United States Patent Laws and Rules. After review of the parent application to this application, (Application Ser. No. 09/859,562), including the specification, drawings and claims, and the present application, which contains the same specification, drawings and claims, by me, Mr. DeCarlo, Mr. Bigby, Mr. Gade, and other employees of Yahoo!, I believe that the proper inventorship for the application has been determined. Specifically, it was determined that Mr. McFaddin is a joint inventor along with me and Mr. Bigby. Mr. Gade, originally named as a co-inventor in the parent case to this application (Application Ser. No. 09/859,562), was determined to not be a co-inventor, even though I understand he was named as a co-inventor with Mr. McFaddin at the time the parent application was filed. I understand that the documents needed to correct inventorship are being filed concurrently herewith.

13. Based on the above described investigation, I believe that inventorship is properly placed with Mr. McFaddin, Mr. Bigby and myself.

14. Accordingly, for the reasons stated above, I believe that Mr. McFaddin is a joint inventor of the claimed invention, and that he made his contribution during the time of his retention and employment with Yahoo!. I do not believe that he is a sole inventor, nor do I believe that he is a sole prior inventor, or an owner of the claimed invention.

15. I am disclosing Mr. McFaddin's unsubstantiated claim to be a sole and prior inventor, and sole owner, although I do not believe his claim to be true, out of an abundance of caution, in the unlikely event that Mr. McFaddin's unsubstantiated claim could be considered "information material to patentability" under the duty of disclosure as set forth in 37 CFR § 1.56.

I hereby declare that all statements made herein of my own knowledge are true; and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that willful false statements may jeopardize the validity of the application, any patent issuing thereon or any patent to which this verified statement was directed.

Dated: 10/7/2002

Justin P. Madison

Justin. P. Madison

Docket No.
694231/0011
JJD:JFD

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: McFaddin et al. Group Art Unit: 2152

Application No.: 10/077,282 Examiner: Not Yet Assigned

Filed: February 14, 2002

For: **METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK**

Date: November 4, 2002

BOX IDS
Commissioner for Patents
Washington, D.C. 20231

DECLARATION OF JAMES J. DECARLO IN SUPPORT OF AN INFORMATION DISCLOSURE STATEMENT ("IDS") DISCLOSING, IN ACCORDANCE WITH 37 CFR § 1.56, CIRCUMSTANCES OF A DISPUTE OVER INVENTORSHIP

I, JAMES J. DECARLO, hereby declare that:

1. I am a citizen of the United States, a registered patent attorney at the law firm of Stroock & Stroock & Lavan LLP, having offices at 180 Maiden Lane, New York, NY 10038, and attorney for signing applicants and Assignee Yahoo!, Inc., a corporation having offices at 701 First Ave., Sunnyvale, CA 94089, hereinafter referred to as "Yahoo!."

2. I make this Declaration to provide facts in accordance with the duty of disclosure under 37 CFR § 1.56.

3. This Declaration is being made based on my first-hand knowledge of the facts recited herein.

4. I first met with Mr. McFaddin on December 5, 2000. On that date, Mr. McFaddin was informed that I was Yahoo!'s patent attorney. At that meeting, we discussed the function of a software application that forms the basis of the subject patent application.

5. A copy of an employment agreement between Yahoo! and Mr. McFaddin, signed by Mr. McFaddin, is attached as Exhibit 1.

6. In the employment agreement, Mr. McFaddin indicated that he had not invented any inventions prior to his signing of the employment agreement.

7. Mr. McFaddin's employment at Yahoo! was subsequently terminated.

8. On May 16, 2001, after Mr. McFaddin's employment with Yahoo! ended, U.S. Patent Application Ser. No. 09/859,562, the parent case to the present application, was filed. The patent application was filed with an unexecuted Declaration, and listed Mr. McFaddin as a joint inventor, along with Mr. Bhargav Gade.

9. The United States Patent and Trademark Office issued a Notice To File Missing Parts—Filing Date Granted, for U.S. Patent Application Ser. No. 09/859,562, on July 16, 2001.

10. In an attempt to obtain a signed Declaration, I forwarded a copy of the application, as well as a Declaration for signature, to Mr. McFaddin on July 31, 2001. A copy of the application and Declaration sent to Mr. McFaddin is attached as Exhibit 2.

11. On or about August 7, 2001, I learned for the first time that Mr. McFaddin, based on the specification and claims of U.S. Patent Application Ser. No. 09/859,562, believed himself to be the sole inventor of the claimed invention. Mr. McFaddin also informed me that contrary to the information in his signed employment agreement, he believed that he had conceived of the claimed invention prior to his employment at Yahoo!.

12. Mr. McFaddin further informed me that he would not sign a Declaration for U.S. Patent Application Ser. No. 09/859,562, because he believed that he was the sole inventor of the claimed subject matter, and because he believed that he had conceived of the claimed invention prior to his employment with Yahoo!. Copies of e-mail messages providing further proof of Mr. McFaddin's refusal to execute the application are attached as Exhibit 3.

13. After learning of Mr. McFaddin's assertions, I conducted a further investigation at Yahoo!. I had telephonic and personal conversations with other employees at Yahoo!, including Mr. Justin P. Madison, Mr. Michael D. Bigby and Mr. Bhargav Gade. During those conversations, I discussed the concept of inventorship, as it pertains to the United States Patent Laws and Rules. After review of the application, including the specification, drawings and claims, by me and the aforementioned Yahoo! employees, the proper inventorship for the application was determined. Specifically, it was determined that Mr. McFaddin was a joint inventor with Mr. Madison and Mr. Bigby, and that Bhargav Gade, originally named as co-inventor, was in fact not a co-inventor. Based upon my investigation, I believe that inventorship is properly placed with Mr. McFaddin, Mr. Madison and Mr. Bigby. The present application is a continuation of U.S. Patent Application Ser. No. 09/859,562, and comprises the same specification, drawings and claims.

14. Specifically, during the pendency of U.S. Patent Application Ser. No. 09/859,562, on February 14, 2002, applicants filed the present patent application, U.S. Patent Application Ser. No. 10/077,282. U.S. Patent Application No. Ser. 10/077,282 claimed priority to U.S. Patent Application Ser. No. 09/859,562, and contained a specification, drawings and set of claims that was identical to those of the earlier application. This was done in effort to continue efforts to secure Mr. McFaddin's cooperation.

15. In the intervening months after Mr. McFaddin first refused to sign, Mr. McFaddin retained counsel, Arthur Navarro, Esq., of Godwin Gruber, P.C. of Dallas Texas. I continued for months to seek Mr. McFaddin's cooperation through his counsel, however, Mr. Novarro advised me that Mr. McFaddin would not sign an application that did not name Mr. McFaddin as a sole inventor, and that Mr. McFaddin was requesting a six-figure payment from Yahoo!. I was once again advised by telephone, in August of 2002, with finality, that Mr. McFaddin would not cooperate. Nonetheless, a copy of the application and Declaration for the present application was sent to Mr. Navarro.

16. I am aware that the United States Patent and Trademark Office issued a Notice To File Missing Parts—Filing Date Granted, on March 13, 2002, in U.S. Patent Application Ser. No. 10/077,282.

17. To date I have not received a signed Declaration from Mr. McFaddin, nor do I believe I ever will.

18. Accordingly, a Declaration in U.S. Patent Application No. 10/077,282 was submitted without Mr. McFaddin's signature, and with Petition To Accept The Signature Of Two Joint Inventors On Behalf Of Themselves And On Behalf Of A Joint Inventor Who Refuses To Join In The Application (37 CFR § 1.47(a)).

19. It is important to note that Mr. McFaddin only made his claims to be a sole and prior inventor of the claimed invention subsequent to his termination by Yahoo!. Contrary to his assertions subsequent to his employment at Yahoo!, while Mr. McFaddin was employed by Yahoo!, he 1) signed an employment agreement in which he indicated that he had no prior inventions (see ¶ 6, above); and 2) made no mention of any claim to sole or prior inventorship or ownership during our meeting when I was introduced as Yahoo!'s patent attorney (see ¶ 4, above).

20. Mr. McFaddin has also not provided any documentary proof to support his assertion of being the sole and prior inventor and owner of the claimed invention.

21. Accordingly, for the reasons stated above, I believe that Mr. McFaddin is a joint inventor of the claimed invention, and that he made his contribution during the time of his employment with Yahoo!. I do not believe that he is a sole inventor, nor do I believe that he is a prior inventor.

22. I am disclosing Mr. McFaddin's unsubstantiated claim to be a sole and prior inventor, and sole owner, although I do not believe his claim to be true, out of an abundance of caution, in the unlikely event that Mr. McFaddin's unsubstantiated claims could be considered "information material to patentability" under the duty of disclosure as set forth in 37 CFR § 1.56.

I hereby declare that all statements made herein of my own knowledge are true; and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that willful false statements may jeopardize the validity of the application, any patent issuing thereon or any patent to which this verified statement was directed.

Dated: 11/19/02

James J. DeCarlo

EXHIBIT 1

YAHOO!, INC.

PROPRIETARY INFORMATION AND ASSIGNMENT OF INVENTIONS AGREEMENT

In exchange for my becoming employed (or my employment being continued) by or retained as a consultant (or my consulting relationship being continued) by Yahoo!, Inc., or its subsidiaries, affiliates, or successors (hereinafter referred to collectively as the "Company"), I hereby agree as follows:

1. I will perform for the company such duties as may be designated by the Company from time to time. During my period of employment or consulting relationship with the Company, I will devote my best efforts to the interests of the Company and will not engage in other employment or in any activities detrimental to the best interests of the Company without the prior written consent of the Company. I agree that my employment or consulting arrangement with the Company is on an "at will" basis, and may be terminated by me or the Company at any time, with or without cause.

2. As used in this Agreement, the term "Inventions" means designs, trademarks, discoveries, formulae, processes, manufacturing techniques, trade secrets, inventions, improvements, ideas, business plans or strategies, or copyrightable works, including all rights to obtain, register, perfect and enforce these proprietary interests; provided that the term "Inventions" shall not be deemed to include those inventions, if any, listed on the schedule attached to this Agreement.

3. As used in this Agreement, the term "Confidential Information" means information pertaining to any aspects of the Company's business which is either information not known by actual or potential competitors of the Company or is proprietary information of the Company or its customers or suppliers, whether relating to the Company's technology, business relationships, customers or otherwise.

4. Without further compensation, I hereby agree promptly to disclose to the Company, and I hereby assign and agree to assign to the Company or its designee, my entire right, title, and interest in and to all Inventions which I may solely or jointly develop or reduce to practice during the period of my employment or consulting relationship with the Company (a) which pertain to any line of business activity of the Company, (b) which are aided by the use of time, material or facilities of the Company, whether or not during working hours, or (c) which relate to any of my work during the period of my employment or consulting relationship with the Company, whether or not during normal working hours. No rights are hereby conveyed in Inventions, if any, made by me prior to my employment or consulting relationship with the Company which are identified in a sheet attached to and made a part of this Agreement, if any (which attachment contains no confidential information).

5. I agree to perform, during and after my employment or consulting relationship, all acts deemed necessary or desirable by the Company to permit and assist it, at its expense, in obtaining and enforcing the full benefits, enjoyment, rights and title throughout the world in the Inventions hereby assigned to the Company as set forth in paragraph 4 above. Such acts may include, but are not limited to, execution of documents and assistance or cooperation in legal proceedings.

6. If the Company is unable for any reason to secure my signature to apply for or to pursue any application for any United States or foreign letters patent or mask work or copyright registration covering inventions, mask works or original works of authorship assigned to the company as above, then I hereby irrevocably designate and appoint the Company and its duly authorized officers and agents as my agent and attorney in fact, to act for and in my behalf and stead to execute and file any such applications and to do all other lawfully permitted acts to further the prosecution and issuance of letters patent or mask work or copyright registrations thereon with the same legal force and effect as if executed by me. I hereby waive and quitclaim to the Company any and all claims, of any nature whatsoever, which I now or may hereafter have for infringement of any patents, mask works or copyrights resulting from any such application for letters patent or mask work or copyright registrations assigned hereunder to the Company.

7. I agree to hold in confidence and not directly or indirectly to use or disclose, either during or after termination of my employment or consulting relationship with the Company, any Confidential Information I obtain or create during the period of my employment or consulting relationship, whether or not during working hours, except to the extent authorized by the Company, until such Confidential Information becomes generally known. I agree not to make copies of such Confidential Information except as authorized by the Company. Upon termination of my employment or consulting relationship or upon an earlier request of the Company, I will return or deliver to the Company all tangible forms of such Confidential Information in my possession or control, including but not limited to drawings, specifications, documents, records, devices, models or any other material and copies or reproductions thereof.

8. I agree to abide faithfully by all Company rules, regulations and policies.

9. I represent that my performance of all the terms of this Agreement and as an employee of or consultant to the Company has not prior to the date hereof and will not breach any agreement to keep in confidence proprietary information, knowledge or data acquired by me in confidence or in trust prior to my becoming an employee or consultant of the Company, and I have not previously and will not at any future time disclose to the Company, or induce the Company to use, any confidential or proprietary information or material belonging to any previous employer or others. I agree not to enter into any agreement either written or oral in conflict with the provisions of this Agreement, and I certify that, to the best of my knowledge, I am not a party to any other agreement which will interfere with my full compliance with this Agreement.

10. Without limiting any other provision of this Agreement, I agree that for one (1) year after the date of termination of my employment by the Company I will not (i) induce any employee of the Company to leave the employ of the Company or (ii) solicit the business of any client or customer of the Company (other than on behalf of the Company) in a manner competitive with the Company.

11. This Agreement (a) shall survive my employment by or consulting relationship with the Company, (b) does not in any way restrict my right or the right of the Company to terminate my employment or consulting relationship, (c) inures to the benefit of successors and assigns of the Company, and (d) is binding upon my heirs and legal representatives.

12. Because my services are personal and unique and because I may have access to and become acquainted with the Confidential Information of the Company, the Company shall have the right to enforce this Agreement and any of its provisions by injunction, specific performance or other equitable relief, without bond and without prejudice to any other rights and remedies that the Company may have for a breach of this Agreement.

13. If one or more of the provisions in this Agreement are deemed unenforceable by law, then the remaining provisions will continue in full force and effect.

14. This Agreement does not apply to an invention which qualifies fully under the provisions of Section 2870 of the Labor Code, a copy of which is attached hereto as Exhibit A. I agree to disclose all Inventions made by me in confidence to the Company to permit a determination as to whether or not the Inventions should be the property of the Company.

15. The provisions of the Agreement shall apply to the entire term of my employment or consulting relationship with the Company, including all such periods prior to the date of this Agreement.

16. I certify and acknowledge that I have carefully read all of the provisions of this Agreement and that I understand and will fully and faithfully comply with such provisions.

Dated: 12-2-99

EMPLOYEE

James S. McFadden

Signature

JAMES E. McFADDEN

Printed Name

YAHOO!, INC.

By: Vicky Shen

Title: HR

EXHIBIT A

Section 2870 of the California Labor Code is as follows:

(a) Any provision in an employment agreement which provides that an employee shall assign, or offer to assign, any of his or her rights in an invention to his or her employer shall not apply to an invention that the employee developed entirely on his or her own time without using the employer's equipment, supplies, facilities, or trade secret information except for those inventions that either:

(1) Relate at the time of conception or reduction to practice of the invention to the employer's business, or actual or demonstrably anticipated research or development of the employer.

(2) Result from any work performed by the employee for the employer.

(b) To the extent a provision in an employment agreement purports to require an employee to assign an invention otherwise excluded from being required to be assigned under subdivision (a), the provision is against the public policy of this state and is unenforceable.

ATTACHMENT

List of Inventions

If none, initial here: NONE

Otherwise, list inventions below:

EXHIBIT 2

APPLICATION OF

JAMES MCFADDIN

BHARGAV GADE

FOR LETTERS PATENT OF THE UNITED STATES

METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK

James J. DeCarlo
Registration No. 36,120
Attorney for Applicant
STROOCK & STROOCK & LAVAN LLP
180 Maiden Lane
New York, New York 10038
(212) 806-5400

Atty. Docket No.: 694231/0011

FIELD OF THE INVENTION

[001] This invention relates to a system and apparatus for controlling the flow of data from multiple sources. More specifically, the invention relates to a system and apparatus for automatically combining data from multiple sources to form a composite data stream.

BACKGROUND OF THE INVENTION

[002] Businesses invest a great deal of time and money developing new ways to reach potential customers. One common way that companies provide information about their products and services is to deliver commercials during television broadcasts. In one known method, commercials are simply inserted when there is an audible break in the broadcast. In another embodiment, they are played in response to audible tones that are embedded in the broadcast. For example, in one such method, a 25 Hz tone indicates that a commercial should start and a 35 Hz tone indicates that the commercial should end. Under most circumstances, these commercials are recorded on videocassettes, and loaded into video cassette recorders (VCRs) that have been connected to the broadcast system. An operator, who knows the order in which the commercials should be played, manually starts the appropriate VCR (or other playback device) at the appropriate time.

[003] The tremendous growth in popularity of the Internet has encouraged businesses to use the Worldwide Web to attempt reach potential customers. The development of "streaming media" provides an efficient way to deliver live performances, television broadcasts and similar events to Internet users. Generally speaking, streaming media includes a set of images and sounds that are sent over the Internet, and played for the viewer in sequence as they arrive. Without streaming media, an Internet user would have to download an entire file before any audio or video could be played. Downloading such a file, which is usually very large, often

consumes a substantial amount of time and is typically the source of considerable frustration. The availability of streaming media broadcasts encourages companies to insert advertisements and other information into the media stream as it is delivered to users over the Internet.

[004] The use of audible gaps and tones to trigger the insertion of information into a data stream has the obvious drawbacks that are associated with a system that requires human intervention. While automated systems are available they also have problems. Such systems typically also store commercials and other information on videocassettes, which can be highly inefficient. It often takes a long time to properly position the tape to play the desired message, which makes it difficult to play commercials in any order other than that in which they have been recorded on the tape. Also, videocassettes tend to break and wear out with extended use, which requires the use of backup tapes.

[005] Accordingly, although known apparatus and processes may be suitable for their intended purposes, a need remains for systems and methods for automatically inserting advertisements into a streaming media broadcast.

SUMMARY OF THE INVENTION

[006] The invention is generally directed to a system for controlling the flow of data from multiple sources to generate a composite information stream. In one embodiment, the system includes a plurality of data sources linked to a flow control system. The flow control system is configured to receive data from two or more of said plurality of data sources and from a data control manager, to selectively insert data received from the plurality of data sources into the data stream in response to commands from the data control manager, and to pass the merged data to an encoder.

[007] In one embodiment, the data includes commercial advertisements. Files that contain the advertisements are downloaded to a computer that is linked to the encoder. The data

control manager can also compile a list of the advertisements that have been transmitted to the media player.

[008] Other embodiments of the present invention and features thereof will become apparent from the following detailed description, considered in conjunction with the accompanying drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[009] FIG. 1 illustrates a system that is capable of delivering a composite information stream over a computer network in accordance with an embodiment of the invention.

[0010] FIG. 2 contains a detailed illustration of a flow control system linked to associated hardware in accordance with an embodiment of the invention.

[0011] FIG. 3 is a block diagram that shows one way in which data can be selectively transmitted from multiple sources according to an embodiment of the invention;

[0012] FIG. 4 is a schematic illustration showing a flow driver linked to a flow controller in accordance with an embodiment of the invention;

[0013] FIG. 5 is a block diagram that illustrates in detail the manner in which stored data may be delivered to the flow control system in accordance with one embodiment of the invention;

[0014] FIG. 6 is a block diagram that illustrates in detail the manner in which stored data may be transferred to end user processors in accordance with one embodiment of the invention;

[0015] FIG. 7 illustrates data from multiple sources simultaneously being displayed on a video monitor; and

[0016] FIG. 8 shows how an event can trigger the display of data a video monitor in accordance with the invention.

[0017] While the present invention will be described in connection with certain embodiments thereof, it is to be understood that the invention is not limited to those embodiments. On the contrary, it is intended to cover all alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

[0018] Referring now to the drawings which are provided to describe embodiments of the invention and not by way of limitation, FIG. 1 illustrates schematically, a system 100 which delivers a composite information stream over a computer network, such as the Internet. As used herein, the phrase "composite information stream" refers to a stream of information that could include one or more of several different items or types of data either sequentially or in some simultaneous combination. For example, a composite information stream could include live data from a television broadcast, data that is located on one or more storage devices such as a digital video disc (DVD) player, a video cassette recorder (VCR), a personal computer, various files from a file storage device, etc. or it could include some combination of data from these sources. Thus, for example, the stream could contain live data, then stored data, then live data. While the composite information is described as being part of a "single" stream, those skilled in the art will recognize that the various types of data could be split or duplicated, or that subsets of the data could be combined to generate two or more streams, each of which contains multiple types of data. While the delivery of such information over the Internet is a common use for system 100, it is to be understood that it could be used to deliver information over a local area network (LAN) wide area network (WAN) or other system.

[0019] System 100 generally includes multiple end user processors 102, a streaming media server 104, a web server 106 and a flow control system 10. As will be described in detail,

flow control system 10 communicates with multiple information sources 12, 14, 16 and 18 to insert the data from these sources into a composite information stream. End user processors 102 typically include an Internet browser, such as Internet Explorer or Netscape Navigator, and a streaming media player such as Microsoft Windows Media Player, or Real Networks' Real Player. Various web sites are linked to system 100 by web server 106 for viewing by end users 102. End users 102 may access streaming media and various other forms of content by viewing web sites and selecting various links.

[0020] Turning to FIG. 2, flow control system 10 typically provides an intermediate link between an encoder 26 and a media delivery device 24, and it generally includes various computer executable files. Media delivery device 24 typically includes a capture portion which receives data from one or more input sources and a driver portion which forwards the received information to one or more output sources. In at least one embodiment of the invention, flow control system 10 is an independent module, physically separated from the media delivery device (e.g. in a separate electronic box or unit), yet linked to it to allow communication with at least the driver portion. Exemplary media delivery devices that may be used in accordance with the invention include audio cards such as those manufactured by Crystal Semiconductor, Inc. and Antex Electronics Corp. and video cards such as those manufactured by Osprey Communications, Inc. Encoder 26 is generally of the type that communicates with a streaming media server 104 to transfer an audio and/or video data stream from a radio or television broadcast to a media player as previously described. In one embodiment of the invention media delivery device 24, flow control system 10 and encoder 26 are located in separate electronic boxes.

[0021] Referring to FIG. 3, delivering a composite information stream to end users 102 in accordance with the invention typically begins by loading startup information in encoder 26 as indicated in block 202. As stated above, the invention may be used with the Microsoft Windows Media Player. In such an embodiment, startup information will typically be provided in a configuration file that identifies the driver that will be used to deliver audio and/or video data from media delivery device 24. The configuration file will identify the device driver 36 that will be used, and may also describe the format in which the data should be delivered to encoder 26.

[0022] A command in the configuration file (which was loaded into the encoder memory at step 204) directs encoder 26 to deliver a composite information stream. Flow control system 10 is then loaded into the encoder memory as shown in block 206. Encoder 26 initializes flow control system 10 and delivers the data format and device driver information that was obtained from the configuration files as shown in block 208. Next, flow control system 10 loads driver 36, initializes it and sets up a callback routine to enable encoder 26 to receive audio and or video data from driver 36 as shown in block 210. Flow control system 10 passes the media data that it receives from driver 36 to encoder 26 at block 212, which forwards the data to the media player at end users processors 102.

[0023] Before data at driver 36 is forwarded by flow control system 10 to encoder 26, flow control system 10 determines from the startup information whether information from one or more alternate sources will be inserted into the media stream as indicated in block 214. More specifically, flow control system 10 continues to pass data from the media delivery device until it receives a signal that data from an alternate source should be inserted. When such a signal is received, flow control system 10 selects the designated alternate source as indicated in block 216, and passes data from the selected source to encoder 26. The data from this alternate source

will be inserted into the data stream until the entire file has been delivered to encoder 26. Once the file has been inserted into the stream, flow control system 10 returns to block 214 to determine whether another alternate source should be selected to transmit another file. If so, the next alternate source is selected and the data is passed from the selected source to encoder 26. This continues until it is determined (i.e. at block 214) that no files from other sources are to be passed to encoder 26. Flow control system 10 then returns to media delivery device 24 and continues to pass data from media driver 36 to encoder 26.

[0024] Returning to FIG. 2, flow control system 10 controls the flow of data from multiple sources to deliver a composite information stream to end users 102. In an embodiment of the invention, two or more data sources 12, 14, 16 and 18 are linked to flow driver 20. As shown, some sources may be linked to flow driver 20 through media delivery device 24 (e.g. sources 12, 14 and 16), while others (e.g. source 18) are linked directly to flow driver 20. Sources 12, 14 and 16 may provide analog data that will be converted to digital data by media delivery device 24, or they may provide digital data that is forwarded to encoder 26 with limited (or no) processing. In contrast, sources such as data source 18 that are directly connected to flow driver 20 will typically be provided in digital form, or include an analog to digital converter or other device that will enable the data to be converted to a digital format prior to its delivery to flow driver 20. While the illustration shows multiple data sources 12, 14 and 16 connected to media delivery device 24 and only a single source 18 connected directly to flow driver 20, it should be understood that multiple sources could be directly connected to flow driver 20 and/or that a single source could be connected to media delivery device 24.

[0025] When the appropriate signal is received from data control manager 32, flow driver 20 selectively passes data from data sources 12, 14, 16 and 18 to encoder 26. Encoder 26 then

returns to media delivery device 24 and continues merging data it provides into the composite stream. The information is then forwarded to the appropriate media player at end user processor 102 and displayed on a video monitor, personal digital assistant screen or other output device.

[0026] As indicated earlier, sources 12, 14, 16 and 18 may include live data, such as, for example, that from a television broadcast and one or more video cassette recorders, digital video disc players, digital satellite systems, and similar devices. Sources 12, 14, 16 and 18 may also include computers and other devices that provide stored data such as audio video interleaved files and graphics interchange files. Signals that trigger flow control system 10 to pass data from one of the additional sources will preferably be embedded or otherwise included in the broadcast. As stated earlier, these may be audible signals, such as tones or beeps, or they may be some other indicator that may be used in accordance with the invention. Signals could be used as they are delivered, or they could be embedded in the broadcast in one format (e.g. as an audible tone), and converted to another format (e.g. an electrical impulse) if desired. While embedded signals are commonly provided, those skilled in the art will recognize from the teachings herein that flow driver 20 could be triggered to vary the transmission source when the signals are provided independently such as, for example, by a timing device, by a computer that has been programmed to generate signals at an appropriate time, or by a manual process.

[0027] While the invention is described herein as delivering information from a single media delivery device 24 at a time, it is to be understood that the invention could be configured to simultaneously pass data from multiple devices. For example, several encoders 26, each of which is linked to a separate flow control system 10, could be linked to communicate with a single end user processor 102. Different media delivery devices 24 could then communicate with each flow control system to provide different types of data. Such an embodiment of the

invention could be used, for example, to deliver a composite information stream that includes data from two or more audio and/or video drivers as well as one or more DVD players and VCRs.

[0028] Also, the output of a single flow control system 10 could be sent to multiple encoders 26, each encoding in a different manner. For example, it is often preferable to encode different types of information at different rates. More specifically, while some end users are connected to the Internet using 28 kbps modems, others are connected using 56 kbps modems. Using known devices, data encoded at different rates would have to be passed to different encoders 26, before they could be displayed on the associated output devices. According to an embodiment of the invention, information that is delivered to flow driver 20 by sources 12, 14, 16 and/or 18 may include signals that identify the appropriate encoding rate. Encoder 26 may be configured to read these signals to encode the data as directed.

[0029] Turning to FIG. 4, flow driver 20 receives various commands from data control manager 32, which is typically an externally located software component. Data control manager 32 is used to designate the order in which data will be received from sources 12, 14, 16 and 18, encoded into a composite stream, and transmitted to end users 102. It should be appreciated that flow control system 10 can be used to combine many types of data for delivery to end users 102 as a composite stream. In one embodiment, flow control system 10 may provide updated information about content in a program that is being broadcast. For example, during a broadcast of a sports event, flow control system 10 may provide updated statistics about a player or team that is involved in the event. In another embodiment, information that allows a viewer to contact the appropriate source to order products or services that are associated with the program content

may be provided. In one embodiment, flow control system 10 inserts commercial advertisements ("ads") into a television broadcast.

[0030] The order in which the connected sources are selected to transmit data is stored in queue 22. The transmission order stored in queue 22 can be obtained in numerous ways, such as in a pre-programmed list, a computer program or interactively. In one embodiment, the list may be transferred or downloaded from another location, such as a personal computer that is directly connected to queue 22 or that is connected to queue 22, for example, via a local area or wide area network including, but not limited to the Internet. In yet another embodiment of the invention, telephone lines may be used to provide the information that is used to control the order in which data is transmitted from data sources 12, 14 16 and 18. In one such embodiment, the user may press the various buttons on the telephone key pad or dial to select numbers that are associated with the different data sources 12, 14, 16 and 18 to designate the order in which data should be transmitted from those sources. In another such embodiment, it may be desired to enable the system to recognize voice commands and convert them to a digital format as provided by sound cards such as those manufactured by Dialogic Corporation, Parsippany, NJ. The addition of such a device may allow a user to state a number that identifies the appropriate data source, or to state one or more words that identify the data that will be transmitted, such as the title, the name or subject of an advertisement. In another embodiment, voice recognition software may be incorporated directly into flow control system 10 to allow the user to issue such voice commands without the use of a Dialogic card. When delivering commands via telephone lines, it may be desired to adapt flow control system 10 to require users to enter a personal identification number or other identifying information in order to prevent unauthorized changes from being made.

Those skilled in the art will recognize that the invention could also be adapted to accommodate the use of cellular telephones, personal digital assistants and other wireless devices.

[0031] In one embodiment of the invention, data control manager 32 communicates with web server 106 to obtain the data that will be stored in source 18. More specifically, data control manager 32 passes parameters that indicate the type of encoder 26 that is connected to flow control system 10, and the application that will be used to deliver the data that is stored in source 18, as well as the duration that will be available for playing the data (i.e. "break length" in the case of an advertisement file), and the type of files (e.g. AVI, WAV) that can be stored. In response, web server 106 provides a list of the names of files that have been previously delivered to the encoder that satisfy the parameters. The actual files may be delivered to encoder 26 in several ways. For example, in one embodiment of the invention, the files are downloaded from web server 106 via a scheduled job. Such a job could run at scheduled intervals to deliver new file.

[0032] As indicated in FIG. 3, once an appropriate signal is received at block 214, flow control system 10 selects an alternate source and passes data from the selected source until the desired amount of data has been delivered to encoder 26. In one embodiment, this portion of the invention operates as shown in FIGS. 5 and 6. First, data control manager 32 sends a command to flow control system 10 to set up queue 22 as indicated in block 402. The various data files that may be delivered by sources 12, 14, 16 and 18 are associated with identifiers, which are typically numerical values. The set up of queue 22 in block 402, typically includes placing the numbers that are associated with these files in the order in which the files are to be delivered to encoder 26. When the appropriate signal is detected in block 214 of FIG. 3, data control

manager 32 sends the name of the file that is associated with the number provided by queue 22 to flow controller 10 at block 406.

[0033] Turning next to FIG. 6, the named file is then loaded from the selected source into a memory linked to encoder 26 at block 408. The file is converted to a format that can be used by encoder 26 as indicated in block 410 and is stored in the encoder 26 memory. The converted data file is passed to the media player at block 412 for display on end user processors 102. A unique data identifier is also passed to data control manager 32 at block 414 to indicate that the requested data has in fact been transmitted to encoder 26. If desired, information about the files that are transmitted to the media player can be used by other applications. For example, the system can be set up so that each time a commercial advertisement is transmitted to the media player, data control manager 32 memorializes the event to create an advertisement log that can be used to show what advertisements have been played.

[0034] Once the designated data has been played by the media player, data control manager 32 will refill queue 22 with new file information and reset it. As stated earlier, the invention may be used to deliver information to a Windows Media Player. These embodiments of the invention will typically carry out file conversion using application programming interfaces that are provided by a software development kit, such as those that are provided by Microsoft Corp. to convert files for use by various media players.

[0035] In one embodiment of the invention, the data that is downloaded from web server 106, stored in source 18 and transmitted to encoder 26 includes commercial advertisements. The assignment and transmission of unique identifiers allows for the tracking of the advertisements, and provides a way to verify that requested advertisements have been played.

[0036] In one embodiment, computer generated files, such as audio video interleaved files and/or a graphics interchange files are stored in source 18. These files may be compressed, for example, to comply with JPEG and/or MPEG standards. It should be noted that the system that is placed between the computer generated data and flow driver 20 may perform "AND" and "OR" operations. Thus, in one embodiment, flow controller 10 may direct flow driver 20 to transmit data from only one source 12, 14, 16 or 18. In such an embodiment, the data from both sources may be passed to flow controller 10, which will dictate which of the two sources should be connected to flow driver 20 for the transmission of data.

[0037] As illustrated in FIG. 7, in another embodiment, flow controller 10 may direct flow driver 20 to simultaneously transmit data from two or more sources 12, 14, 16 or 18. Such an embodiment may, for example, allow an image 44 from a television broadcast to simultaneously be displayed with a symbol 42 such as a logo or a watermark that identifies a sponsor, content provider or other entity that may be associated with the information that is being transmitted. In this embodiment, flow controller 10 may direct flow driver 20 to receive the data from both sources to cause both sources to pass data to encoder 26 simultaneously.

[0038] Referring to FIG. 8, in still another embodiment of the invention, the occurrence of one or more events may be used to initiate the transmission of data from sources 12, 14, 16 and 18. For example, information from a live telecast 46 such as a sports or news event may be transmitted to one or more data sources 12, 14, 16 and 18. Queue 22 may then select the appropriate data source when it receives an appropriate signal (e.g. at the beginning or end of the event), to insert information 48 which may include video clips, still images, reports, highlights, summaries, scores or other information from the event into the video stream. In one embodiment of the invention, breaking news may be fed to one of data sources 12, 14, 16 and 18 along with a

signal that triggers flow control system 10 to immediately transmit the data from the source. A broadcast may then be interrupted to provide the breaking news to the viewer in response to the signal. In another embodiment, video from a sports event may be fed to one of data sources 12, 14, 16 and 18. A signal may be generated to indicate that the event has concluded, to cause queue 22 to select the associated data source when the next (or a designated) signal that is embedded in the broadcast is received, to display the final score and to play a video clip with highlights of the event. Thus, as indicated by these exemplary embodiments of the invention, signals may be assigned different priority levels, to cause some information to interrupt broadcasts when necessary and to allow the system to deliver other information only at regularly scheduled breaks.

[0039] In one embodiment of the invention, tones that are embedded in a broadcast may be detected by data control manager 32 using a hardware based detection procedure. In such an embodiment, a signal may be transmitted to a software component that runs on a device that is external to flow control system 10 when such tones are detected. The software component on this separate piece of hardware may then send a command to data control manager 32 to request playing of the ad designated by queue 22. The command is then forwarded to flow control system 10 which selects and plays the ad. A signal is preferably transmitted to data control manager 32 when flow control system 10 finishes playing the ad, and queue 22 is filled with another ad. In one embodiment, data control manager 32 sends a command to flow control system 10 to cause an ad that was identified during queuing to be played.

[0040] In another embodiment of the invention, a software based tone detection process may be included in flow control system 10 and data control manager 32 may use this process to encode information from the various sources into the composite data stream. In such an

embodiment, tone control software may be loaded into flow control system 10 and the audio and/or video data that has been captured may be analyzed to determine whether any tones are present. A detected tone is interpreted by flow control system 10 as an event (described earlier), which is forwarded to data control manager 32. In response, data control manager 32 may send a command back to flow control system 10 to cause the specified commercial to be played. In this embodiment, data control manager 32 would initially configure flow control system 10 to set up the frequencies that will trigger an event in data control manager 32.

[0041] In another embodiment, encoder 26 may be configured to read signals that identify any or all of the numerous parameters that relate to how the information should be displayed, such as whether the information being transmitted will be displayed in monochrome or in color, whether it includes a monophonic or stereophonic broadcast, the appropriate frame size. etc. In such embodiments, the information that is received by encoder 26 may be routed through the appropriate portion of the circuitry in order to accommodate the requirements that are imposed by these parameters.

[0042] It should be noted that any or all of the above described and similar functions could be incorporated into a single computer, or that these functions may be incorporated in accordance with the choices of Internet users, content providers or others. It should also be noted that any or all of the actions that are conducted by flow control system 10 may be tracked and stored in a file or otherwise provided in a log, in order to assist with billing or other appropriate operations.

[0043] It is, therefore, apparent that there has been provided, in accordance with the present invention, a method and apparatus for delivering a composite information stream to a display. While this invention has been described in conjunction with preferred embodiments

thereof, it is evident that many alternatives, modifications, and variations will be apparent to those skilled in the art. Accordingly, it is intended to embrace all such alternatives, modifications and variations that fall within the spirit and broad scope of the appended claims.

CLAIMS

What Is Claimed Is:

1. A system for delivering a composite information stream over a computer network, comprising:

a media delivery device having a media device driver associated therewith;

a flow control system being independent of and communicating with said media delivery device and with a stored data source, wherein said flow control system is configured to receive data from said media delivery device and from said stored data source, and to control the flow of said media delivery device data and said stored data source; and

an encoder communicating with said flow control system to receive said controlled data flow.

2. A system as claimed in claim 1 further comprising:

an Internet media player which receives said data from said encoder and displays said data on a video monitor using an Internet browser;

a data classifier which associates identifiers with said data;

an identifier recorder which records the passage of a designated type of data to said Internet media player; and

an identifier collector which enters a plurality of said recorded passages into a common data file.

3. A method as claimed in claim 2 wherein said designated type of data is a commercial advertisement, and said common data file is an advertising log.

4. A system as claimed in claim 1 wherein said media delivery device provides live data.

5. A system as claimed in claim 1 wherein said media delivery device provides a television broadcast.

6. A system as claimed in claim 1 wherein said stored data is downloaded from a web server and stored on a computer linked to said encoder.

7. A system as claimed in claim 1 wherein said stored data includes commercial advertisements.

8. A system as claimed in claim 7 wherein said flow control system allows a user to obtain information about content displayed in said commercial advertisements.

9. A system as claimed in claim 8 wherein said flow control system allows a user to order products or services that are associated with said content.

10. A system as claimed in claim 7 wherein said flow control system provides updated information about said media delivery device data.

11. A system as claimed in claim 1 wherein said stored data is located in an audio video interleaved file or a graphics interchange formatted file.

12. A system as claimed in claim 1 wherein said flow control system is located in an electronic unit that is physically separate from said media delivery device.

13. A system as claimed in claim 1, wherein said flow control system is a software module, and further comprising a data control manager software module for passing control instructions to said flow control system.

14. A system as claimed in claim 13, further comprising a queue coupled to said flow control system for passing information related to a desired order of data delivery from said stored data source.

15. A system as claimed in claim 13 wherein said data control manager passes said control instructions via the Internet.

16. A system as claimed in claim 14 wherein said queue is remotely alterable.

17. A system as claimed in claim 16 wherein said queue is altered by transferring information over a computer network.

18. A system as claimed in claim 17 wherein said queue is altered by downloading information from the Internet.

19. A system as claimed in claim 16 wherein said queue is altered by pressing buttons on a telephone key pad.

20. A system as claimed in claim 1 wherein said flow control system monitors said media delivery device data for a control signal, and wherein said flow control system signals said data control manager of receipt of said control signal, and wherein said data control manager controls said flow control manager in response to said control signal.

21. A system as claimed in claim 20 wherein said control signal is an elapsed time.

22. A system as claimed in claim 20 wherein said control signal is embedded in said media delivery device data.

23. A system as claimed in claim 22 wherein said control signal is an audible tone.

24. A system as claimed in claim 1 further comprising a software log of events, said software log being created in response to said controlled data flow, said software log containing a record of the data passed to said encoder from said stored data source by said flow controller.

25. A system as claimed in claim 24 wherein said software log is transferable over the Internet.

26. A system as claimed in claim 1 wherein said media delivery device data is a television broadcast.

27. A system as claimed in claim 1 wherein said stored data is an advertisement.

28. A system as claimed in claim 14 wherein said queue is an advertisement queue.

29. A system as claimed in claim 24 wherein said software log is an advertising log.

30. A system for delivering a composite information stream over a computer network, comprising:

a plurality of data sources; and

a flow control system configured to:

receive data from two or more of said plurality of data sources and from a data control manager,

to selectively control the flow of data received from said plurality of data sources in response to commands from said data control manager, and

to pass said controlled data flow to an encoder as a composite information stream.

31. A system as claimed in claim 30 further comprising:

a media player communicating with said encoder to receive said composite information stream from said encoder;

a data classifier which associates identifiers with said data;

an identifier recorder which records the passage of a designated type of data to said media player; and

an identifier collector which enters a plurality of said recorded passages into a common data file.

32. A method as claimed in claim 31 wherein said designated type of identifier identifies a commercial advertisement, and said common data file is an advertising log.

33. A system as claimed in claim 30 wherein at least one of said plurality of data sources is a live data source and at least one of said data sources is a stored data source, and wherein said flow control system is configured to communicate with a data control manager to selectively pass, in response to commands from said data control manager, data from at least one of said live data sources and from one or more of said at least one stored data sources.

34. A system as claimed in claim 33 further comprising an encoder configured to receive said selectively pass data to transform said received data into a composite data stream.

35. A system as claimed in claim 33 wherein said flow control system includes an electronic queue.

36. A system as claimed in claim 33 wherein said stored data is downloaded from a web server and stored on a computer linked to said encoder.

37. A system as claimed in claim 30 wherein said flow control system includes an electronic queue.

38. A system as claimed in claim 30 wherein at least one of said plurality of data sources provides live data.

39. A system as claimed in claim 38 wherein at least one of said plurality of said data sources includes a video feed.

40. A system as claimed in claim 39 wherein said video feed is a television broadcast.

41. A system as claimed in claim 30 wherein at least one of said plurality of data sources provides stored data.

42. A system as claimed in claim 41 wherein said stored data includes commercial advertisements.

43. A system as claimed in claim 41 wherein said stored data is located in an audio video interleaved file, a graphics interchange formatted file, is located in a file that has been compressed according to joint photographic experts group standards, or is located in a file that has been compressed according to motion picture experts group standards.

44. A system as claimed in claim 41 wherein said stored data is downloaded from a web server and stored on a computer linked to said encoder.

45. A system as claimed in claim 44 wherein said stored data includes commercial advertisements.

46. A system for delivering a composite information stream to an output device, comprising:

a plurality of data sources;

a flow control system which receives data from one or more of said plurality of data sources and selectively passes data from one or more of said plurality of data sources to an encoder; and

a media player which receives said data from said encoder and delivers said data to a video display.

47. A method of delivering a composite information stream over a computer network, comprising:

obtaining data from a plurality of data sources;

receiving control signals from a flow control system interposed between said plurality of data sources and an encoder;

selectively passing data from one or more of said plurality of data sources to said encoder in response to said received control signals;

delivering said selectively passed data to said encoder;

transforming said selectively passed data into a composite data stream; and

delivering said composite data stream to a media player.

48. A method as claimed in claim 47 wherein selectively passing further comprises;

designating an order of transmission of data from two or more of said plurality of data sources;

inserting said data into an information stream in said designated order; and

passing said information stream to said encoder.

49. A method as claimed in claim 47 wherein obtaining said data further comprises:

placing a plurality of data identifiers in an order in accordance with said designated transmission order; and

transferring names of data sets that are associated with said data identifiers to said flow control system in said data identifier order.

50. A method as claimed in claim 49 wherein selectively passing further comprises:

loading a named data set into an encoder; and

transmitting said named data set to a media player.

51. A method as claimed in claim 49 further comprising passing said data identifiers to said flow controller in said data identifier order.

52. A system as claimed in claim 51 further comprising:

recording the passage of an identifier associated with a designated type of named data set to said Internet media player; and

entering a plurality of said recorded passages in a common data file.

53. A method as claimed in claim 52 wherein said designated type of identifier is a commercial advertisement, and said common data file is an advertising log.

54. A method as claimed in claim 47 wherein at least one of said plurality of data sources provides live data.

55. A method as claimed in claim 54 wherein said live data source is a video feed.

56. A method as claimed in claim 55 wherein said video feed is a television broadcast.

57. A method as claimed in claim 47 wherein at least one of said plurality of data sources provides stored data.

58. A method as claimed in claim 57 wherein said stored data resides in an audio video interleaved file, a graphics interchange formatted file, a file that has been compressed according to joint photographic experts group standards or a file that has been compressed according to motion picture expert group standards.

59. A method of delivering a composite information stream over a computer network, comprising:

capturing a first data set;

receiving a request for transmission of at least a second data set;

designating an order of transmission of said first and at least said second data sets; and

controlling the flow of data from said first data set and at least said second data set in accordance with said designated order.

60. A method as claimed in claim 59 further comprising:

delivering said controlled flow to a media player;

associating identifiers with said data;

recording the passage of a designated type of identifier to said media player; and

entering a plurality of said recorded passages in a common data file.

61. A method as claimed in claim 60 wherein said designated type of identifier is a commercial advertisement, and said common data file is an advertising log.

62. A method as claimed in claim 59 wherein said output device is a video monitor.

63. A method as claimed in claim 59 wherein said output device is a personal digital assistant.

64. A method as claimed in claim 59 wherein said order designating step further comprises retrieving a predetermined data transmission order from an electronic queue.

65. A method as claimed in claim 59 wherein at least one of said data sets includes live data.

66. A method as claimed in claim 65 wherein a source of said live data is a video feed.

67. A method as claimed in claim 66 wherein said video feed is a television broadcast.

68. A method as claimed in claim 59 wherein at least one of said data sets delivers stored data.

69. A method as claimed in claim 68 wherein said stored data is in an audio video interleaved file, a graphics interchange formatted file, a file that has been compressed according to joint photographic experts group standards or a file that has been compressed according to motion picture experts group standards.

ABSTRACT

A system and method for delivering a composite information stream over a computer network includes a flow control system that is connected to multiple information sources. The flow control system receives data from two or more of these sources and from a data control manager. The system selectively controls the flow of data that is received from the data sources in response to commands from the data control manager to create the composite information stream. The composite information stream is passed to the encoder, which forwards it to the media player for display at end user processors. In accordance with the invention, commercial advertisements may be inserted into a television broadcast, and transmitted over the Internet to be displayed on a video monitor.

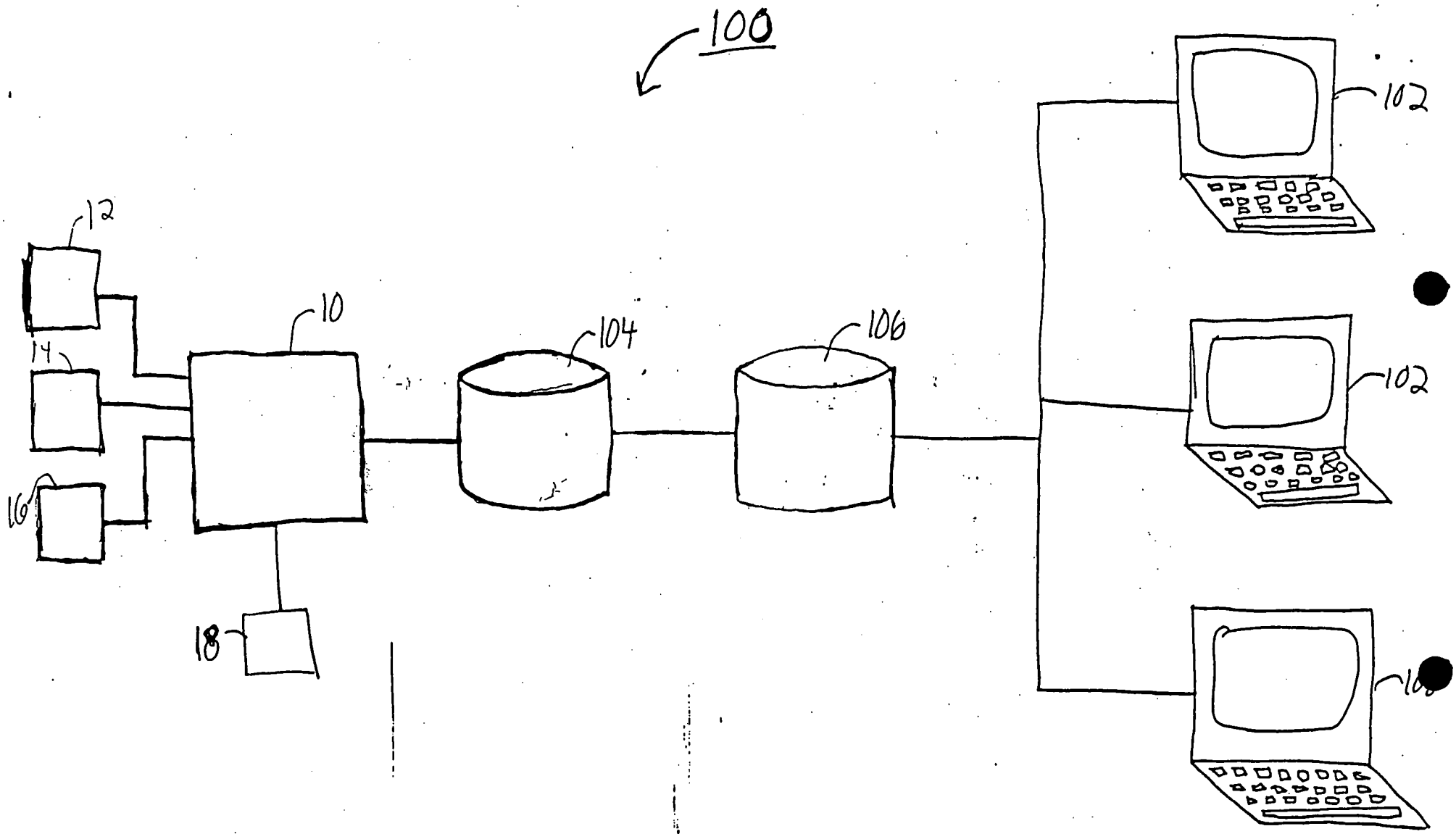


FIG. 1

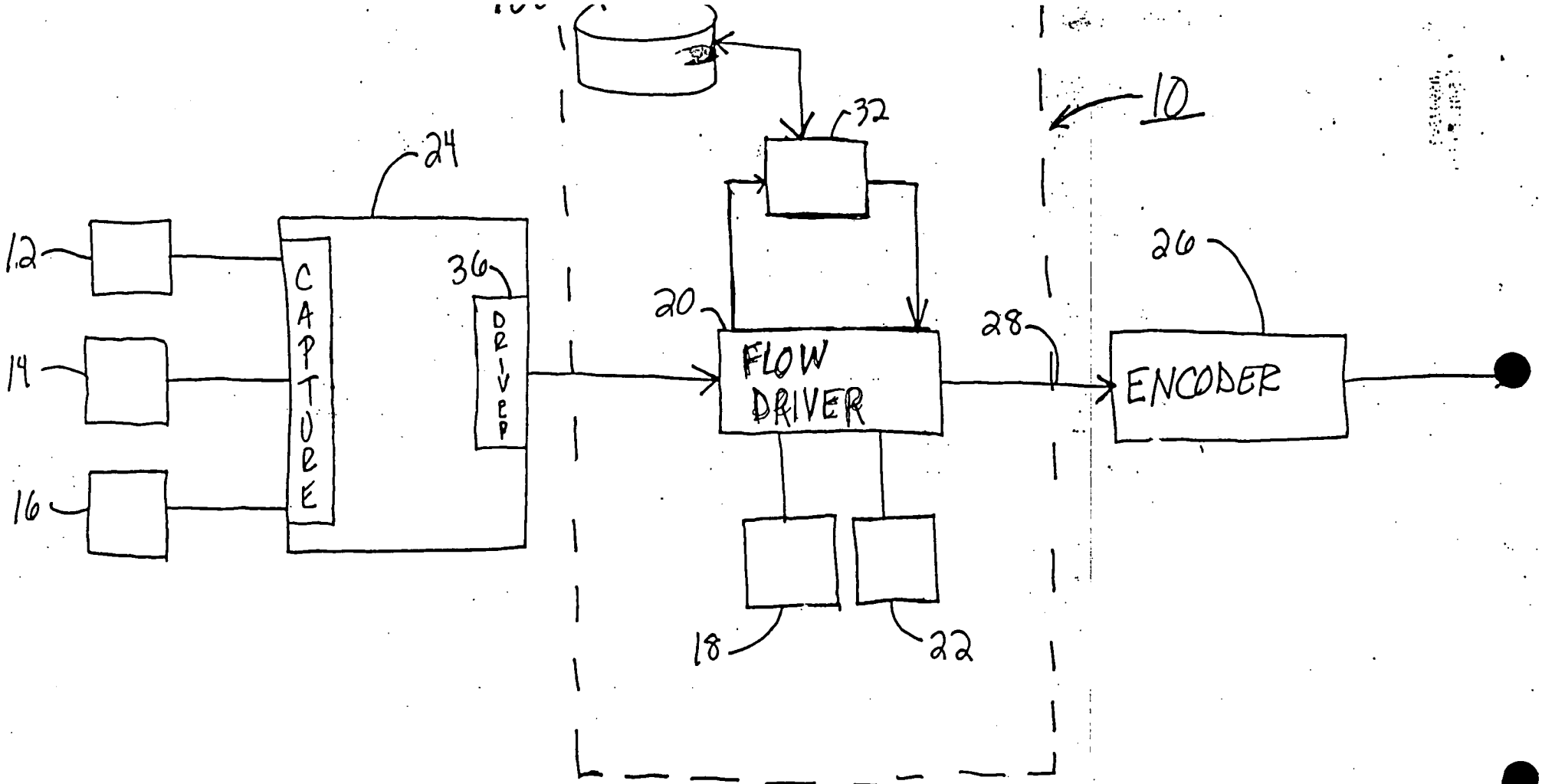

10
12
14
16
18
20
22
24
26
28
32
36
CAPTURE
DRIVER
FLOW DRIVER
ENCODER

FIG. 2

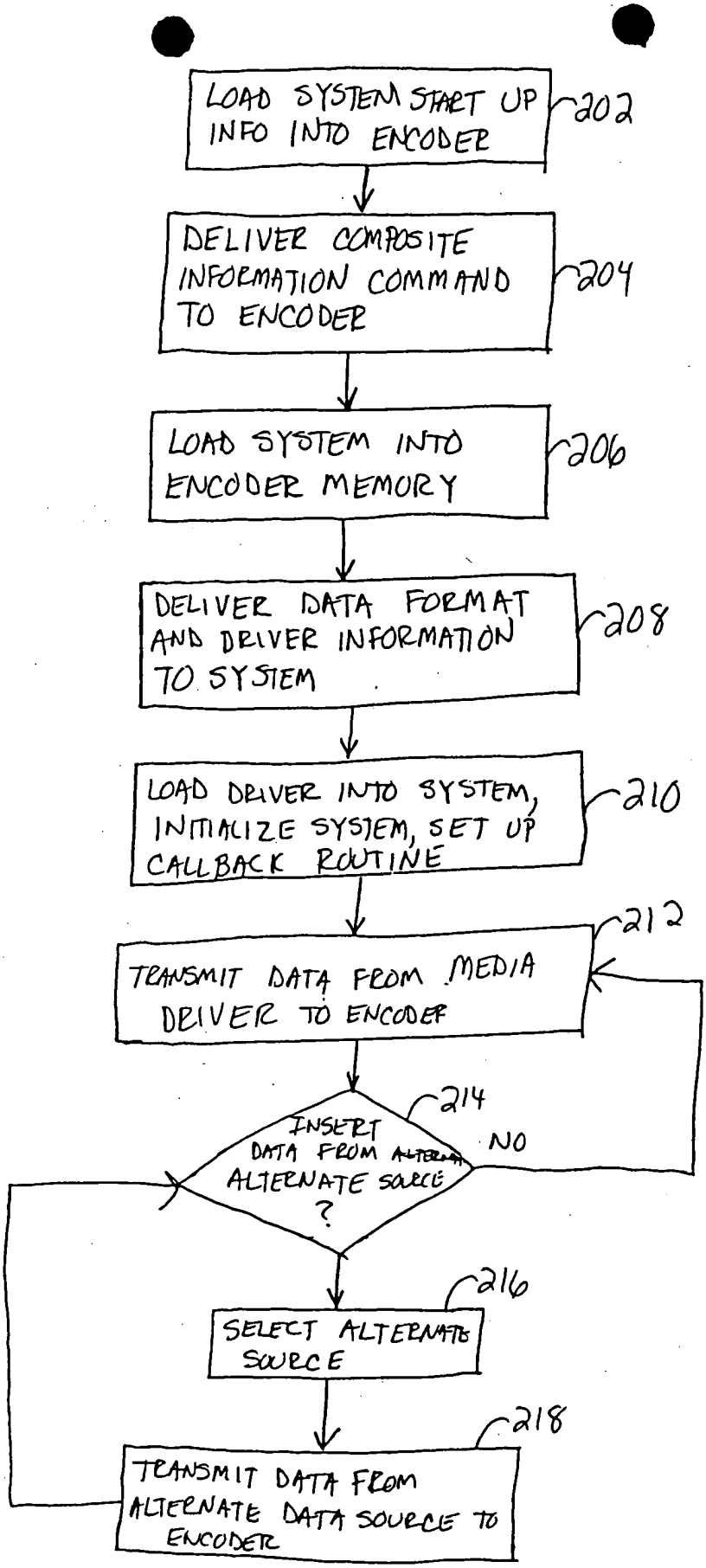

LOAD SYSTEM START UP INFO INTO ENCODER
202
DELIVER COMPOSITE INFORMATION COMMAND TO ENCODER
204
LOAD SYSTEM INTO ENCODER MEMORY
206
DELIVER DATA FORMAT AND DRIVER INFORMATION TO SYSTEM
208
LOAD DRIVER INTO SYSTEM, INITIALIZE SYSTEM, SET UP CALLBACK ROUTINE
210
TRANSMIT DATA FROM MEDIA DRIVER TO ENCODER
212
INSERT DATA FROM ALTERNATE SOURCE ?
214
NO
SELECT ALTERNATE SOURCE
216
TRANSMIT DATA FROM ALTERNATE DATA SOURCE TO ENCODER
218

FIG. 3

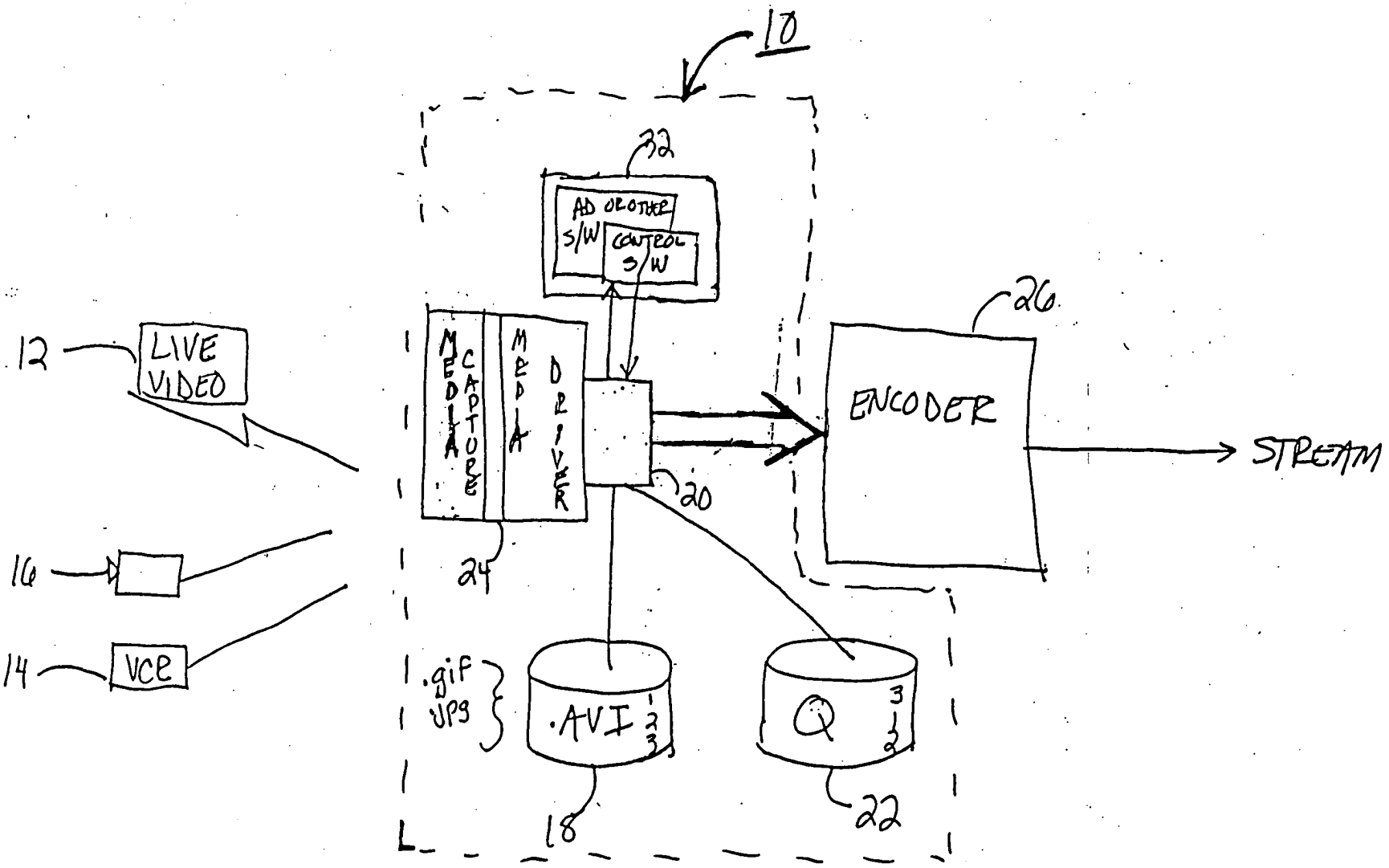

10
32
AD OR OTHER S/W
CONTROL S/W
26
12
LIVE VIDEO
MEDIA CAPTURE
MEDIA DRIVER
ENCODER
STREAM
20
16
24
14
VCE
.gif
JPG
.AVI
Q
18
22

FIG. 4

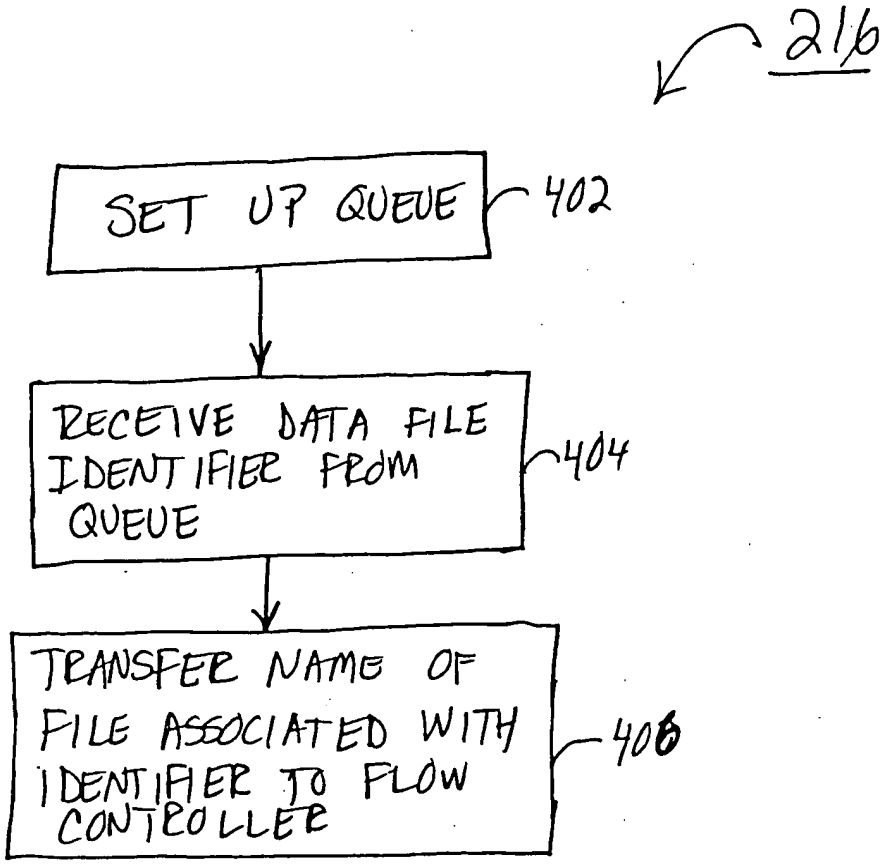

216
SET UP QUEUE
402
RECEIVE DATA FILE IDENTIFIER FROM QUEUE
404
TRANSFER NAME OF FILE ASSOCIATED WITH IDENTIFIER TO FLOW CONTROLLER
406

FIG. 5

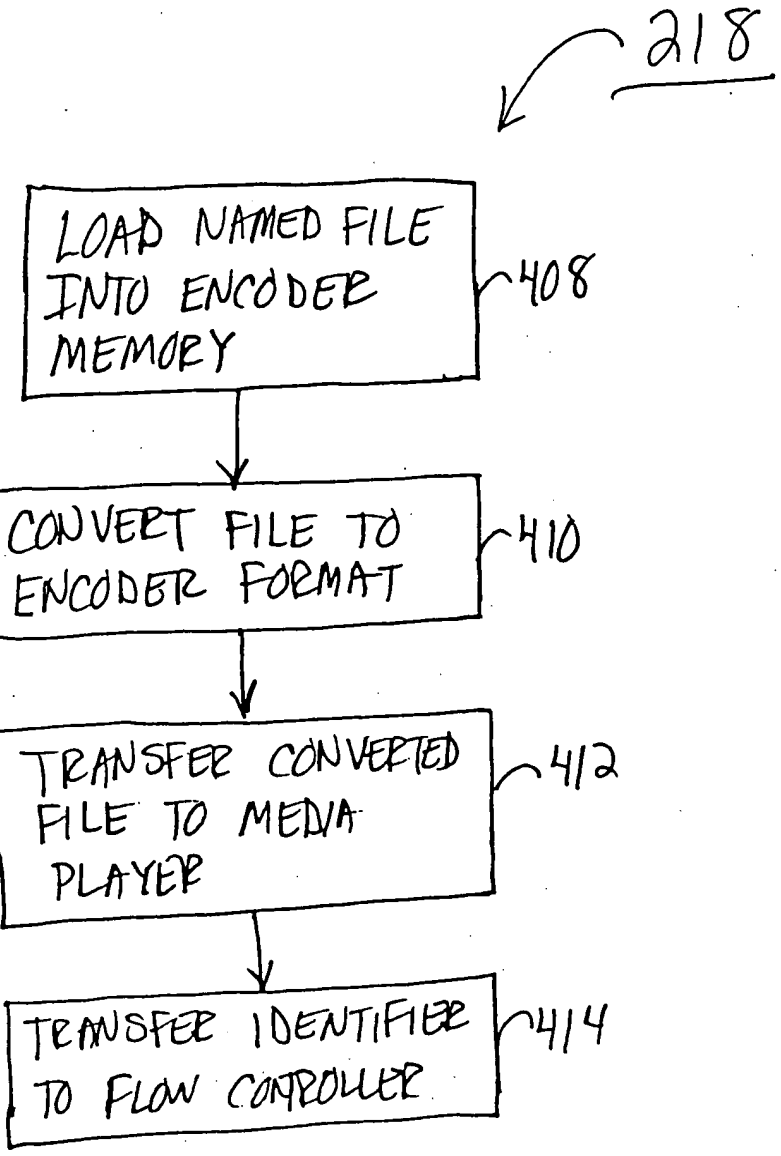

218
LOAD NAMED FILE INTO ENCODER MEMORY
408
CONVERT FILE TO ENCODER FORMAT
410
TRANSFER CONVERTED FILE TO MEDIA PLAYER
412
TRANSFER IDENTIFIER TO FLOW CONTROLLER
414

FIG. 6

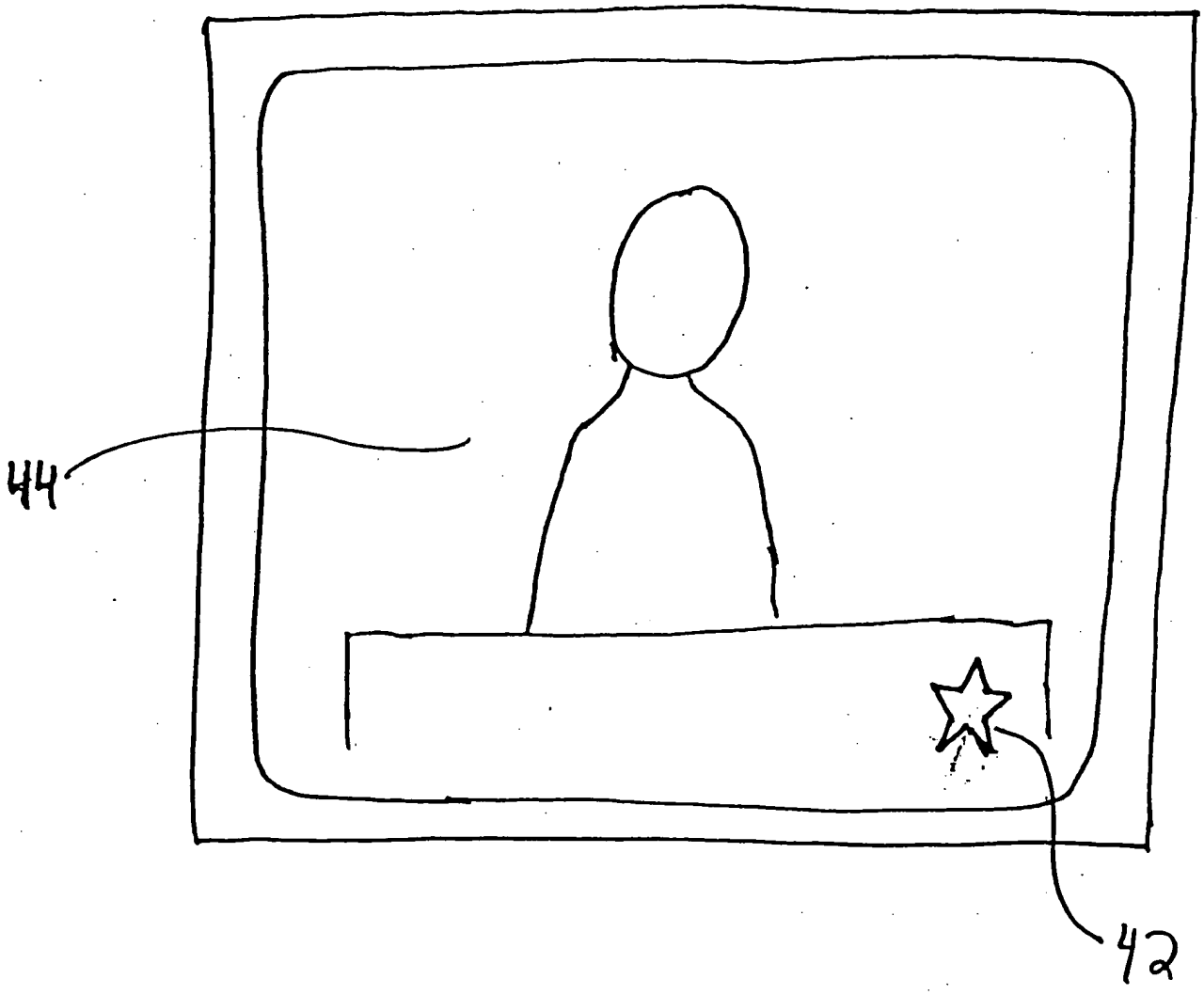


FIG. 7

FIG. 8

[694231/0011]

ASSIGNMENT

WHEREAS, we, **James E. McFaddin**, a citizen of the United States of America, residing at 3021 Filberton, Dallas, Texas, 75229, and **Bhargav Gade**, a citizen of India, residing at 1213 Meadow Creek Drive, Apt. J, Irving, Texas 75038, hereinafter referred to as ASSIGNORS, have invented certain new and useful improvements in a **METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK**, for which we have filed an application for Letters Patents of the United States on May 16, 2001 on Serial No. 09/859,562;

WHEREAS, **YAHOO!, Inc.**, hereinafter referred to as ASSIGNEE, a corporation organized and existing under the laws of the state of Delaware, having a mailing address at 701 First Avenue, Sunnyvale, California 94089, is desirous of obtaining the entire right, title and interest in, to and under the improvements and the application;

NOW, THEREFORE, in consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the ASSIGNORS, have assigned, transferred and set over, and by these presents do hereby assign, transfer and set over, unto the ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the improvements, and the application and all divisions, renewals and continuations thereof, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof, and all applications for Letters

Patent which may hereafter be filed for the improvements in any country or countries foreign to the United States, and all Letters Patent which may be granted for the improvements in any country or countries foreign to the United States and all extensions, renewals and reissues thereof; and we hereby authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for the improvements to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting the improvements, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing and reissue applications, make all rightful oaths and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for the improvements in all countries.

IN TESTIMONY WHEREOF, I have set my hand and seal to this Assignment.

_____, 2001

_____
JAMES E. MCFADDIN

State of)
) ss.:
County of)

On this ____ day of _____, 2001 before me, a Notary Public in and for the State and County aforesaid, personally appeared **JAMES E. MCFADDIN**, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

IN TESTIMONY WHEREOF, I have set my hand and seal to this Assignment.

_____, 2001

_____
BHARGAV GADE

State of)
) ss.:
County of)

On this ____ day of _____, 2001 before me, a Notary Public in and for the State and County aforesaid, personally appeared **BHARGAV GADE**, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

COMBINED DECLARATIONAND POWER OF ATTORNEY FOR PATENT APPLICATION
(Page 1)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled **METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK**, the specification of which was filed on **May 16, 2001** as United States Application No. 09/859,562.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b), of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designates at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed:

Country	Application No	Filed (Day/Mo./Yr.)	Priority Claimed (Yes unless box is checked)
		/ /	☐

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below

Application No	Filed (Day/Mo./Yr.)
	/ /

COMBINED DECLARATIONAND POWER OF ATTORNEY FOR PATENT APPLICATION
(Page 2)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application No.	Filed (Day/Mo./Yr.)	Status (Patented, Pending, Abandoned)
	/ /	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith (list name and registration numbers).

Lawrence Rosenthal, Reg. No. 24,377
Steven B. Pokotilow, Reg. No. 26,405
James J. DeCarlo, Reg. No. 36,120
Matthew W. Siegal, Reg. No. 32,941

Send Correspondence to:

James J. DeCarlo
STROOCK & STROOCK & LAVAN LLP
180 Maiden Lane
New York, New York 10038

Direct Telephone Calls to:

James J. DeCarlo
(212) 806-5400

COMBINED DECLARATIONAND POWER OF ATTORNEY
FOR PATENT APPLICATION
(Page 3)

Full Name of First Inventor: **James E. MCFADDIN**

Inventor's signature: _____ Date: _____

Citizen/Subject of: **United States of America**

Residence: **3021 Filberton**
Dallas, Texas 75229

Post Office Address: **P.O. Box 781212**
Dallas, TX 75378

COMBINED DECLARATIONAND POWER OF ATTORNEY FOR PATENT APPLICATION
(Page 4)

Full Name of First Inventor: **Bhargav GADE**

Inventor's signature: _____ Date: _____

Citizen/Subject of: **India**

Residence: **1213 Meadow Creek Drive, Apt. J**
Irving, TX 75038

Post Office Address: **(Same as Residence)**

EXHIBIT 3

James DeCarlo - Patent Serial No. 09/859,562

From: "James McFaddin" <mcfaddin_james@hotmail.com>
To: <AHANKINS@stroock.com>
Date: 8/7/01 6:30 PM
Subject: Patent Serial No. 09/859,562
CC: <JDECARLO@stroock.com>, <RBELL@stroock.com>

Stroock & Stroock & Lavan LLP
180 Maiden Lane
New York, NY 10038

Re: U.S Patent Application Serial No. 09/859,562
METHOD AND SYSTEM FOR DELEIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK

Dear Angie M Hankins:

This is in response to your request that I sign and return a Combined Declaration and Power of Attorney for Patent Application and Assignment for the above referenced patent. As I mentioned in our phone conversation this invention was conceived of and reduced to practice before my employment with Yahoo. Hopefully the following will make this clear to you.

During the early part of October 1999 I met with two representative of Yahoo to discuss their need for a custom audio/video software driver. They expressed their desire to have the driver programmatically switch between normal audio/video input and audio/video files located on a computer. Upon leaving we agreed to meet later and discuss the scheduling and delivery of the driver software.

I investigated how other organizations were performing this operation. I knew the complexities of writing a custom driver and was familiar with the infrastructure required for maintaining custom software. Using experience, I gained over many years of software development, and techniques that I developed while designing numerous other software systems, I conceived of the method described in this patent which, among other things, would allow Yahoo to use whatever commercially available audio/video driver they desired. The advantages of doing this are numerous and beyond the scope of this letter.

This idea was not a product of any confidential or proprietary information of Yahoo. It originated in "my mind" in response to the express needs of Yahoo and other organizations that stream media and from my experience in software development.

After meeting again with the Yahoo representatives I told them that instead of writing a custom driver that I had a better idea. After presenting this method and its numerous advantages to them they agreed to use it. I explained that in about a week I could have a working version of the software that would demonstrate to them the viability of the idea.

During that week I did in fact develop a working version of the software that I named AdMerge. To help demonstrate the software component I also developed a software program that I later named Dennis. Both these components together comprise the totality of the both the independent and dependent claims made in this patent. This work was done without using Yahoo's facilities and without collaboration with any Yahoo employees.

My understanding is that reverse engineering, performing bug fixes, or making obvious changes or modifications to a prior invention does not qualify and individual to be a co-inventor. It is not apparent to me what novel idea(s) BHARGAV GADE contributed to the conception or reduction to practice of this invention.

I assert that before I began working for Yahoo and signing the PROPRIETARY INFORMATION AND ASSIGNMENT OF INVENTIONS AGREEMENT dated 12/2/99 the ideas and improvements embodying U.S. Patent Application #09/859,562 and titled

METHOD AND SYSTEM FOR DELEIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK, was conceived in my mind and reduced to practice by me and me alone without using any of Yahoo's facilities, or any of their confidential or proprietary information.

As such the PROPRIETARY INFORMATION AND ASSIGNMENT OF INVENTIONS AGREEMENT does not apply to the intellectual property discussed in this patent. Further, it is not my intention to assign to Yahoo my rights, titles or interest in or to improvements on this invention at this time. I also will not sign the Combined Declaration and Power of Attorney for Patent Application because in my opinion you would not act in my best interest.

I remain,
James E. McFaddin
E-mail: mcfaddin_james@hotmail.com
Phone: 972-247-0584

James DeCarlo - Patent Serial No. 09/859,562

From: "James McFaddin" <mcfaddin_james@hotmail.com>
To: <AHANKINS@stroock.com>
Date: 8/9/01 3:00 PM
Subject: Patent Serial No. 09/859,562
CC: <JDECARLO@stroock.com>

Re: U.S Patent Application Serial No. 09/859,562
METHOD AND SYSTEM FOR DELEIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK

Dear Angie M Hankins:

While compiling supportive evidence that the above-mentioned patent was conceived before my employment with Yahoo I discovered that the statement "During the early part of October 1999" should read "During the early part of September 1999"

Secondly your attempt to enter BHARGAV GADE as a co-inventor appears to be a veiled attempt to circumvent your inability to acquire my power of attorney and file for patent. It appears that you have entered him as a co-inventor solely to enable you to file for patent under 35 USC 116. My careful study of the patent claims, a review of my notes with meeting with Yahoo officials, and analysis of the software I wrote to show the viability of the idea clearly shows that he contributed nothing novel to the conception or reduction to practice of this invention. It should be further noted that none of the claims, made in this patent, could be attributed to him.

I need not mention to you that 37 CFR 10.18 states that "whoever ... knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, ... or makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statement..." You know the rest.

James E. McFaddin

From: James DeCarlo
To: mcfaddin_james@hotmail.com
Date: 11/13/01 1:53PM
Subject: contact

I would like to speak to you further to our last conversation - can I call you around 9am Central time tomorrow, Wednesday Nov 14th? I will call 972-488-0491, unless you provide an alternate number. please advise

James DeCarlo - Re: contact

From: "James McFaddin" <mcfaddin_james@hotmail.com>
To: <JDECARLO@stroock.com>
Date: 11/14/01 6:14 PM
Subject: Re: contact

James -
You must contact my attorney he is now handling this matter for me.

Arthur I Navarro
Godwin Gruber
801 E. Campbell Road, Suite 655
Richardson, Texas 75082-1890
(972) 238-7160
(214) 939-4400

James E. McFaddin

>From: "James DeCarlo" <JDECARLO@stroock.com>
>To: <mcfaddin_james@hotmail.com>
>Subject: contact
>Date: Tue, 13 Nov 2001 13:53:57 -0500
>
>** High Priority **
>
>I would like to speak to you further to our last conversation - can I call
>you around 9am Central time tomorrow, Wednesday Nov 14th? I will call
>972-488-0491, unless you provide an alternate number. please advise
>

FedEx Express
Customer Support Trace
3875 Airways Boulevard
Module H, 4th Floor
Memphis, TN 38116

U.S. Mail: PO Box 727
Memphis, TN 38194-4643

Telephone: 901-369-3600

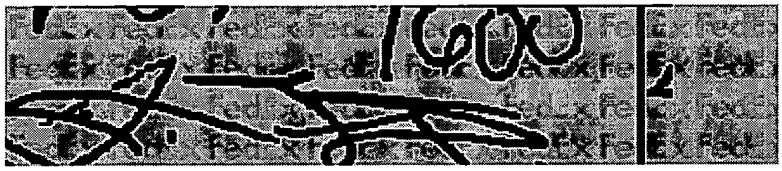
12/13/2002

Dear Customer:

Here is the proof of delivery for the shipment with tracking number **829409576670**. Our records reflect the following information.

Delivery Information:

Signed For By: J.STORY



Delivery Location: 1201 ELM 1600
Delivery Date: September 19, 2002
Delivery Time: 0855

Shipping Information:

Tracking No: 829409576670

Ship Date: September 18, 2002

Recipient:
ARTHUR I. NAVARRO
GODWIN GRUBER P.C.
RENAISSANCE TOWER
DALLAS, TX 75270
US

Shipper:
STROOCK & STROOCK & LAVAN LLP
STROOCK & STROOCK & LAVAN LLP
180 MAIDEN LN FL 35
NEW YORK, NY 100384925
US

Shipment Reference Information: JAMES J. DECARLOS

Thank you for choosing FedEx Express. We look forward to working with you in the future.

FedEx Worldwide Customer Service
1-800-Go-FedEx®
Reference No.: R2002121300065719223

STROOCK

JAMES J. DECARLO
212-806-5742
JDECARLO@STROOCK.COM

Via Federal Express

September 18, 2002

Arthur I. Navarro, Esq.
Godwin Gruber, P.C.
Renaissance Tower
1201 Elm Street, Suite 1700
Dallas, Texas 75270

Re: U.S. Patent Application Serial No. 10/077,282
METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK
James McFaddin, Justin Madison and Michael Bigby
Our Client/Matter No.: 694231/0011

Dear Mr. Navarro:

For the sake of good order, we have attached a copy of the Specification and a Declaration for U.S. Patent Application No. 10/077,282, entitled METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK. This is the application that your client, James McFaddin, has advised us through you that he refuses to sign. Note that Mr. McFaddin is listed as a co-inventor, with Justin Madison and Michael Bigby, as we discussed, and that Mr. Gade has been removed. I thought you would like a copy for your file. Should Mr. McFaddin have a change of heart, do not hesitate to contact me.

Very truly yours,

James J. DeCarlo

Attachments

SSL-DOCS1 1261623v2

James DeCarlo - Patent Serial No. 09/859,562

From: "James McFaddin" <mcfaddin_james@hotmail.com>
To: <AHANKINS@stroock.com>
Date: 8/7/01 6:30 PM
Subject: Patent Serial No. 09/859,562
CC: <JDECARLO@stroock.com>, <RBELL@stroock.com>

Stroock & Stroock & Lavan LLP
180 Maiden Lane
New York, NY 10038

Re: U.S Patent Application Serial No. 09/859,562
METHOD AND SYSTEM FOR DELEIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK

Dear Angie M Hankins:

This is in response to your request that I sign and return a Combined Declaration and Power of Attorney for Patent Application and Assignment for the above referenced patent. As I mentioned in our phone conversation this invention was conceived of and reduced to practice before my employment with Yahoo. Hopefully the following will make this clear to you.

During the early part of October 1999 I met with two representative of Yahoo to discuss their need for a custom audio/video software driver. They expressed their desire to have the driver programmatically switch between normal audio/video input and audio/video files located on a computer. Upon leaving we agreed to meet later and discuss the scheduling and delivery of the driver software.

I investigated how other organizations were performing this operation. I knew the complexities of writing a custom driver and was familiar with the infrastructure required for maintaining custom software. Using experience, I gained over many years of software development, and techniques that I developed while designing numerous other software systems, I conceived of the method described in this patent which, among other things, would allow Yahoo to use whatever commercially available audio/video driver they desired. The advantages of doing this are numerous and beyond the scope of this letter.

This idea was not a product of any confidential or proprietary information of Yahoo. It originated in "my mind" in response to the express needs of Yahoo and other organizations that stream media and from my experience in software development.

After meeting again with the Yahoo representatives I told them that instead of writing a custom driver that I had a better idea. After presenting this method and its numerous advantages to them they agreed to use it. I explained that in about a week I could have a working version of the software that would demonstrate to them the viability of the idea.

During that week I did in fact develop a working version of the software that I named AdMerge. To help demonstrate the software component I also developed a software program that I later named Dennis. Both these components together comprise the totality of the both the independent and dependent claims made in this patent. This work was done without using Yahoo's facilities and without collaboration with any Yahoo employees.

My understanding is that reverse engineering, performing bug fixes, or making obvious changes or modifications to a prior invention does not qualify and individual to be a co-inventor. It is not apparent to me what novel idea(s) BHARGAV GADE contributed to the conception or reduction to practice of this invention.

I assert that before I began working for Yahoo and signing the PROPRIETARY INFORMATION AND ASSIGNMENT OF INVENTIONS AGREEMENT dated 12/2/99 the ideas and improvements embodying U.S. Patent Application #09/859,562 and titled

METHOD AND SYSTEM FOR DELEIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK, was conceived in my mind and reduced to practice by me and me alone without using any of Yahoo's facilities, or any of their confidential or proprietary information.

As such the PROPRIETARY INFORMATION AND ASSIGNMENT OF INVENTIONS AGREEMENT does not apply to the intellectual property discussed in this patent. Further, it is not my intention to assign to Yahoo my rights, titles or interest in or to improvements on this invention at this time. I also will not sign the Combined Declaration and Power of Attorney for Patent Application because in my opinion you would not act in my best interest.

I remain,
James E. McFaddin
E-mail: mcfaddin_james@hotmail.com
Phone: 972-247-0584

James DeCarlo - Patent Serial No. 09/859,562

From: "James McFaddin" <mcfaddin_james@hotmail.com>
To: <AHANKINS@stroock.com>
Date: 8/9/01 3:00 PM
Subject: Patent Serial No. 09/859,562
CC: <JDECARLO@stroock.com>

Re: U.S Patent Application Serial No. 09/859,562
METHOD AND SYSTEM FOR DELEIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK

Dear Angie M Hankins:

While compiling supportive evidence that the above-mentioned patent was conceived before my employment with Yahoo I discovered that the statement "During the early part of October 1999" should read "During the early part of September 1999"

Secondly your attempt to enter BHARGAV GADE as a co-inventor appears to be a veiled attempt to circumvent your inability to acquire my power of attorney and file for patent. It appears that you have entered him as a co-inventor solely to enable you to file for patent under 35 USC 116. My careful study of the patent claims, a review of my notes with meeting with Yahoo officials, and analysis of the software I wrote to show the viability of the idea clearly shows that he contributed nothing novel to the conception or reduction to practice of this invention. It should be further noted that none of the claims, made in this patent, could be attributed to him.

I need not mention to you that 37 CFR 10.18 states that "whoever ... knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, ... or makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statement..." You know the rest.

James E. McFaddin

From: James DeCarlo
To: mcfaddin_james@hotmail.com
Date: 11/13/01 1:53PM
Subject: contact

I would like to speak to you further to our last conversation - can I call you around 9am Central time tomorrow, Wednesday Nov 14th? I will call 972-488-0491, unless you provide an alternate number. please advise

James DeCarlo - Re: contact

From: "James McFaddin" <mcfaddin_james@hotmail.com>
To: <JDECARLO@stroock.com>
Date: 11/14/01 6:14 PM
Subject: Re: contact

James -
You must contact my attorney he is now handling this matter for me.

Arthur I Navarro
Godwin Gruber
801 E. Campbell Road, Suite 655
Richardson, Texas 75082-1890
(972) 238-7160
(214) 939-4400

James E. McFaddin

>From: "James DeCarlo" <JDECARLO@stroock.com>
>To: <mcfaddin_james@hotmail.com>
>Subject: contact
>Date: Tue, 13 Nov 2001 13:53:57 -0500
>
>** High Priority **
>
>I would like to speak to you further to our last conversation - can I call
>you around 9am Central time tomorrow, Wednesday Nov 14th? I will call
>972-488-0491, unless you provide an alternate number. please advise
>

YAHOO!, INC.

PROPRIETARY INFORMATION AND ASSIGNMENT OF INVENTIONS AGREEMENT

In exchange for my becoming employed (or my employment being continued) by or retained as a consultant (or my consulting relationship being continued) by Yahoo!, Inc., or its subsidiaries, affiliates, or successors (hereinafter referred to collectively as the "Company"), I hereby agree as follows:

1. I will perform for the company such duties as may be designated by the Company from time to time. During my period of employment or consulting relationship with the Company, I will devote my best efforts to the interests of the Company and will not engage in other employment or in any activities detrimental to the best interests of the Company without the prior written consent of the Company. I agree that my employment or consulting arrangement with the Company is on an "at will" basis, and may be terminated by me or the Company at any time, with or without cause.

2. As used in this Agreement, the term "Inventions" means designs, trademarks, discoveries, formulae, processes, manufacturing techniques, trade secrets, inventions, improvements, ideas, business plans or strategies, or copyrightable works, including all rights to obtain, register, perfect and enforce these proprietary interests; provided that the term "Inventions" shall not be deemed to include those inventions, if any, listed on the schedule attached to this Agreement.

3. As used in this Agreement, the term "Confidential Information" means information pertaining to any aspects of the Company's business which is either information not known by actual or potential competitors of the Company or is proprietary information of the Company or its customers or suppliers, whether relating to the Company's technology, business relationships, customers or otherwise.

4. Without further compensation, I hereby agree promptly to disclose to the Company, and I hereby assign and agree to assign to the Company or its designee, my entire right, title, and interest in and to all Inventions which I may solely or jointly develop or reduce to practice during the period of my employment or consulting relationship with the Company (a) which pertain to any line of business activity of the Company, (b) which are aided by the use of time, material or facilities of the Company, whether or not during working hours, or (c) which relate to any of my work during the period of my employment or consulting relationship with the Company, whether or not during normal working hours. No rights are hereby conveyed in Inventions, if any, made by me prior to my employment or consulting relationship with the Company which are identified in a sheet attached to and made a part of this Agreement, if any (which attachment contains no confidential information).

5. I agree to perform, during and after my employment or consulting relationship, all acts deemed necessary or desirable by the Company to permit and assist it, at its expense, in obtaining and enforcing the full benefits, enjoyment, rights and title throughout the world in the Inventions hereby assigned to the Company as set forth in paragraph 4 above. Such acts may include, but are not limited to, execution of documents and assistance or cooperation in legal proceedings.

6. If the Company is unable for any reason to secure my signature to apply for or to pursue any application for any United States or foreign letters patent or mask work or copyright registration covering inventions, mask works or original works of authorship assigned to the company as above, then I hereby irrevocably designate and appoint the Company and its duly authorized officers and agents as my agent and attorney in fact, to act for and in my behalf and stead to execute and file any such applications and to do all other lawfully permitted acts to further the prosecution and issuance of letters patent or mask work or copyright registrations thereon with the same legal force and effect as if executed by me. I hereby waive and quitclaim to the Company any and all claims, of any nature whatsoever, which I now or may hereafter have for infringement of any patents, mask works or copyrights resulting from any such application for letters patent or mask work or copyright registrations assigned hereunder to the Company.

7. I agree to hold in confidence and not directly or indirectly to use or disclose, either during or after termination of my employment or consulting relationship with the Company, any Confidential Information I obtain or create during the period of my employment or consulting relationship, whether or not during working hours, except to the extent authorized by the Company, until such Confidential Information becomes generally known. I agree not to make copies of such Confidential Information except as authorized by the Company. Upon termination of my employment or consulting relationship or upon an earlier request of the Company, I will return or deliver to the Company all tangible forms of such Confidential Information in my possession or control, including but not limited to drawings, specifications, documents, records, devices, models or any other material and copies or reproductions thereof.

8. I agree to abide faithfully by all Company rules, regulations and policies.

9. I represent that my performance of all the terms of this Agreement and as an employee of or consultant to the Company has not prior to the date hereof and will not breach any agreement to keep in confidence proprietary information, knowledge or data acquired by me in confidence or in trust prior to my becoming an employee or consultant of the Company, and I have not previously and will not at any future time disclose to the Company, or induce the Company to use, any confidential or proprietary information or material belonging to any previous employer or others. I agree not to enter into any agreement either written or oral in conflict with the provisions of this Agreement, and I certify that, to the best of my knowledge, I am not a party to any other agreement which will interfere with my full compliance with this Agreement.

10. Without limiting any other provision of this Agreement, I agree that for one (1) year after the date of termination of my employment by the Company I will not (i) induce any employee of the Company to leave the employ of the Company or (ii) solicit the business of any client or customer of the Company (other than on behalf of the Company) in a manner competitive with the Company.

11. This Agreement (a) shall survive my employment by or consulting relationship with the Company, (b) does not in any way restrict my right or the right of the Company to terminate my employment or consulting relationship, (c) inures to the benefit of successors and assigns of the Company, and (d) is binding upon my heirs and legal representatives.

12. Because my services are personal and unique and because I may have access to and become acquainted with the Confidential Information of the Company, the Company shall have the right to enforce this Agreement and any of its provisions by injunction, specific performance or other equitable relief, without bond and without prejudice to any other rights and remedies that the Company may have for a breach of this Agreement.

13. If one or more of the provisions in this Agreement are deemed unenforceable by law, then the remaining provisions will continue in full force and effect.

14. This Agreement does not apply to an Invention which qualifies fully under the provisions of Section 2870 of the Labor Code, a copy of which is attached hereto as Exhibit A. I agree to disclose all Inventions made by me in confidence to the Company to permit a determination as to whether or not the Inventions should be the property of the Company.

15. The provisions of the Agreement shall apply to the entire term of my employment or consulting relationship with the Company, including all such periods prior to the date of this Agreement.

16. I certify and acknowledge that I have carefully read all of the provisions of this Agreement and that I understand and will fully and faithfully comply with such provisions.

Dated: 12-2-99

EMPLOYEE

James S. McFadden

Signature

JAMES E. McFADDIN

Printed Name

YAHOO!, INC.

By: _____

Title: HR

EXHIBIT A

Section 2870 of the California Labor Code is as follows:

(a) Any provision in an employment agreement which provides that an employee shall assign, or offer to assign, any of his or her rights in an invention to his or her employer shall not apply to an invention that the employee developed entirely on his or her own time without using the employer's equipment, supplies, facilities, or trade secret information except for those inventions that either:

(1) Relate at the time of conception or reduction to practice of the invention to the employer's business, or actual or demonstrably anticipated research or development of the employer.

(2) Result from any work performed by the employee for the employer.

(b) To the extent a provision in an employment agreement purports to require an employee to assign an invention otherwise excluded from being required to be assigned under subdivision (a), the provision is against the public policy of this state and is unenforceable.

ATTACHMENT

List of Inventions

If none, initial here: NONE

Otherwise, list inventions below:

APPLICATION OF

JAMES MCFADDIN

BHARGAV GADE

FOR LETTERS PATENT OF THE UNITED STATES

METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK

James J. DeCarlo
Registration No. 36,120
Attorney for Applicant
STROOCK & STROOCK & LAVAN LLP
180 Maiden Lane
New York, New York 10038
(212) 806-5400

Atty. Docket No.: 694231/0011

"Express Mail" mailing label No.
Number EL 733213170 US
Date of Deposit 5/16/01

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

Jennifer Bartolo
Name

Jennifer Bartolo
Signature

FIELD OF THE INVENTION

[001] This invention relates to a system and apparatus for controlling the flow of data from multiple sources. More specifically, the invention relates to a system and apparatus for automatically combining data from multiple sources to form a composite data stream.

BACKGROUND OF THE INVENTION

[002] Businesses invest a great deal of time and money developing new ways to reach potential customers. One common way that companies provide information about their products and services is to deliver commercials during television broadcasts. In one known method, commercials are simply inserted when there is an audible break in the broadcast. In another embodiment, they are played in response to audible tones that are embedded in the broadcast. For example, in one such method, a 25 Hz tone indicates that a commercial should start and a 35 Hz tone indicates that the commercial should end. Under most circumstances, these commercials are recorded on videocassettes, and loaded into video cassette recorders (VCRs) that have been connected to the broadcast system. An operator, who knows the order in which the commercials should be played, manually starts the appropriate VCR (or other playback device) at the appropriate time.

[003] The tremendous growth in popularity of the Internet has encouraged businesses to use the Worldwide Web to attempt reach potential customers. The development of "streaming media" provides an efficient way to deliver live performances, television broadcasts and similar events to Internet users. Generally speaking, streaming media includes a set of images and sounds that are sent over the Internet, and played for the viewer in sequence as they arrive. Without streaming media, an Internet user would have to download an entire file before any audio or video could be played. Downloading such a file, which is usually very large, often

consumes a substantial amount of time and is typically the source of considerable frustration. The availability of streaming media broadcasts encourages companies to insert advertisements and other information into the media stream as it is delivered to users over the Internet.

[004] The use of audible gaps and tones to trigger the insertion of information into a data stream has the obvious drawbacks that are associated with a system that requires human intervention. While automated systems are available they also have problems. Such systems typically also store commercials and other information on videocassettes, which can be highly inefficient. It often takes a long time to properly position the tape to play the desired message, which makes it difficult to play commercials in any order other than that in which they have been recorded on the tape. Also, videocassettes tend to break and wear out with extended use, which requires the use of backup tapes.

[005] Accordingly, although known apparatus and processes may be suitable for their intended purposes, a need remains for systems and methods for automatically inserting advertisements into a streaming media broadcast.

SUMMARY OF THE INVENTION

[006] The invention is generally directed to a system for controlling the flow of data from multiple sources to generate a composite information stream. In one embodiment, the system includes a plurality of data sources linked to a flow control system. The flow control system is configured to receive data from two or more of said plurality of data sources and from a data control manager, to selectively insert data received from the plurality of data sources into the data stream in response to commands from the data control manager, and to pass the merged data to an encoder.

[007] In one embodiment, the data includes commercial advertisements. Files that contain the advertisements are downloaded to a computer that is linked to the encoder. The data

control manager can also compile a list of the advertisements that have been transmitted to the media player.

[008] Other embodiments of the present invention and features thereof will become apparent from the following detailed description, considered in conjunction with the accompanying drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[009] FIG. 1 illustrates a system that is capable of delivering a composite information stream over a computer network in accordance with an embodiment of the invention.

[0010] FIG. 2 contains a detailed illustration of a flow control system linked to associated hardware in accordance with an embodiment of the invention.

[0011] FIG. 3 is a block diagram that shows one way in which data can be selectively transmitted from multiple sources according to an embodiment of the invention;

[0012] FIG. 4 is a schematic illustration showing a flow driver linked to a flow controller in accordance with an embodiment of the invention;

[0013] FIG. 5 is a block diagram that illustrates in detail the manner in which stored data may be delivered to the flow control system in accordance with one embodiment of the invention;

[0014] FIG. 6 is a block diagram that illustrates in detail the manner in which stored data may be transferred to end user processors in accordance with one embodiment of the invention;

[0015] FIG. 7 illustrates data from multiple sources simultaneously being displayed on a video monitor; and

[0016] FIG. 8 shows how an event can trigger the display of data a video monitor in accordance with the invention.

[0017] While the present invention will be described in connection with certain embodiments thereof, it is to be understood that the invention is not limited to those embodiments. On the contrary, it is intended to cover all alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

[0018] Referring now to the drawings which are provided to describe embodiments of the invention and not by way of limitation, FIG. 1 illustrates schematically, a system 100 which delivers a composite information stream over a computer network, such as the Internet. As used herein, the phrase "composite information stream" refers to a stream of information that could include one or more of several different items or types of data either sequentially or in some simultaneous combination. For example, a composite information stream could include live data from a television broadcast, data that is located on one or more storage devices such as a digital video disc (DVD) player, a video cassette recorder (VCR), a personal computer, various files from a file storage device, etc. or it could include some combination of data from these sources. Thus, for example, the stream could contain live data, then stored data, then live data. While the composite information is described as being part of a "single" stream, those skilled in the art will recognize that the various types of data could be split or duplicated, or that subsets of the data could be combined to generate two or more streams, each of which contains multiple types of data. While the delivery of such information over the Internet is a common use for system 100, it is to be understood that it could be used to deliver information over a local area network (LAN) wide area network (WAN) or other system.

[0019] System 100 generally includes multiple end user processors 102, a streaming media server 104, a web server 106 and a flow control system 10. As will be described in detail,

flow control system 10 communicates with multiple information sources 12, 14, 16 and 18 to insert the data from these sources into a composite information stream. End user processors 102 typically include an Internet browser, such as Internet Explorer or Netscape Navigator, and a streaming media player such as Microsoft Windows Media Player, or Real Networks' Real Player. Various web sites are linked to system 100 by web server 106 for viewing by end users 102. End users 102 may access streaming media and various other forms of content by viewing web sites and selecting various links.

[0020] Turning to FIG. 2, flow control system 10 typically provides an intermediate link between an encoder 26 and a media delivery device 24, and it generally includes various computer executable files. Media delivery device 24 typically includes a capture portion which receives data from one or more input sources and a driver portion which forwards the received information to one or more output sources. In at least one embodiment of the invention, flow control system 10 is an independent module, physically separated from the media delivery device (e.g. in a separate electronic box or unit), yet linked to it to allow communication with at least the driver portion. Exemplary media delivery devices that may be used in accordance with the invention include audio cards such as those manufactured by Crystal Semiconductor, Inc. and Antex Electronics Corp. and video cards such as those manufactured by Osprey Communications, Inc. Encoder 26 is generally of the type that communicates with a streaming media server 104 to transfer an audio and/or video data stream from a radio or television broadcast to a media player as previously described. In one embodiment of the invention media delivery device 24, flow control system 10 and encoder 26 are located in separate electronic boxes.

[0021] Referring to FIG. 3, delivering a composite information stream to end users 102 in accordance with the invention typically begins by loading startup information in encoder 26 as indicated in block 202. As stated above, the invention may be used with the Microsoft Windows Media Player. In such an embodiment, startup information will typically be provided in a configuration file that identifies the driver that will be used to deliver audio and/or video data from media delivery device 24. The configuration file will identify the device driver 36 that will be used, and may also describe the format in which the data should be delivered to encoder 26.

[0022] A command in the configuration file (which was loaded into the encoder memory at step 204) directs encoder 26 to deliver a composite information stream. Flow control system 10 is then loaded into the encoder memory as shown in block 206. Encoder 26 initializes flow control system 10 and delivers the data format and device driver information that was obtained from the configuration files as shown in block 208. Next, flow control system 10 loads driver 36, initializes it and sets up a callback routine to enable encoder 26 to receive audio and or video data from driver 36 as shown in block 210. Flow control system 10 passes the media data that it receives from driver 36 to encoder 26 at block 212, which forwards the data to the media player at end users processors 102.

[0023] Before data at driver 36 is forwarded by flow control system 10 to encoder 26, flow control system 10 determines from the startup information whether information from one or more alternate sources will be inserted into the media stream as indicated in block 214. More specifically, flow control system 10 continues to pass data from the media delivery device until it receives a signal that data from an alternate source should be inserted. When such a signal is received, flow control system 10 selects the designated alternate source as indicated in block 216, and passes data from the selected source to encoder 26. The data from this alternate source

will be inserted into the data stream until the entire file has been delivered to encoder 26. Once the file has been inserted into the stream, flow control system 10 returns to block 214 to determine whether another alternate source should be selected to transmit another file. If so, the next alternate source is selected and the data is passed from the selected source to encoder 26. This continues until it is determined (i.e. at block 214) that no files from other sources are to be passed to encoder 26. Flow control system 10 then returns to media delivery device 24 and continues to pass data from media driver 36 to encoder 26.

[0024] Returning to FIG. 2, flow control system 10 controls the flow of data from multiple sources to deliver a composite information stream to end users 102. In an embodiment of the invention, two or more data sources 12, 14, 16 and 18 are linked to flow driver 20. As shown, some sources may be linked to flow driver 20 through media delivery device 24 (e.g. sources 12, 14 and 16), while others (e.g. source 18) are linked directly to flow driver 20. Sources 12, 14 and 16 may provide analog data that will be converted to digital data by media delivery device 24, or they may provide digital data that is forwarded to encoder 26 with limited (or no) processing. In contrast, sources such as data source 18 that are directly connected to flow driver 20 will typically be provided in digital form, or include an analog to digital converter or other device that will enable the data to be converted to a digital format prior to its delivery to flow driver 20. While the illustration shows multiple data sources 12, 14 and 16 connected to media delivery device 24 and only a single source 18 connected directly to flow driver 20, it should be understood that multiple sources could be directly connected to flow driver 20 and/or that a single source could be connected to media delivery device 24.

[0025] When the appropriate signal is received from data control manager 32, flow driver 20 selectively passes data from data sources 12, 14, 16 and 18 to encoder 26. Encoder 26 then

returns to media delivery device 24 and continues merging data it provides into the composite stream. The information is then forwarded to the appropriate media player at end user processor 102 and displayed on a video monitor, personal digital assistant screen or other output device.

[0026] As indicated earlier, sources 12, 14, 16 and 18 may include live data, such as, for example, that from a television broadcast and one or more video cassette recorders, digital video disc players, digital satellite systems, and similar devices. Sources 12, 14, 16 and 18 may also include computers and other devices that provide stored data such as audio video interleaved files and graphics interchange files. Signals that trigger flow control system 10 to pass data from one of the additional sources will preferably be embedded or otherwise included in the broadcast. As stated earlier, these may be audible signals, such as tones or beeps, or they may be some other indicator that may be used in accordance with the invention. Signals could be used as they are delivered, or they could be embedded in the broadcast in one format (e.g. as an audible tone), and converted to another format (e.g. an electrical impulse) if desired. While embedded signals are commonly provided, those skilled in the art will recognize from the teachings herein that flow driver 20 could be triggered to vary the transmission source when the signals are provided independently such as, for example, by a timing device, by a computer that has been programmed to generate signals at an appropriate time, or by a manual process.

[0027] While the invention is described herein as delivering information from a single media delivery device 24 at a time, it is to be understood that the invention could be configured to simultaneously pass data from multiple devices. For example, several encoders 26, each of which is linked to a separate flow control system 10, could be linked to communicate with a single end user processor 102. Different media delivery devices 24 could then communicate with each flow control system to provide different types of data. Such an embodiment of the

invention could be used, for example, to deliver a composite information stream that includes data from two or more audio and/or video drivers as well as one or more DVD players and VCRs.

[0028] Also, the output of a single flow control system 10 could be sent to multiple encoders 26, each encoding in a different manner. For example, it is often preferable to encode different types of information at different rates. More specifically, while some end users are connected to the Internet using 28 kbps modems, others are connected using 56 kbps modems. Using known devices, data encoded at different rates would have to be passed to different encoders 26, before they could be displayed on the associated output devices. According to an embodiment of the invention, information that is delivered to flow driver 20 by sources 12, 14, 16 and/or 18 may include signals that identify the appropriate encoding rate. Encoder 26 may be configured to read these signals to encode the data as directed.

[0029] Turning to FIG. 4, flow driver 20 receives various commands from data control manager 32, which is typically an externally located software component. Data control manager 32 is used to designate the order in which data will be received from sources 12, 14, 16 and 18, encoded into a composite stream, and transmitted to end users 102. It should be appreciated that flow control system 10 can be used to combine many types of data for delivery to end users 102 as a composite stream. In one embodiment, flow control system 10 may provide updated information about content in a program that is being broadcast. For example, during a broadcast of a sports event, flow control system 10 may provide updated statistics about a player or team that is involved in the event. In another embodiment, information that allows a viewer to contact the appropriate source to order products or services that are associated with the program content

may be provided. In one embodiment, flow control system 10 inserts commercial advertisements ("ads") into a television broadcast.

[0030] The order in which the connected sources are selected to transmit data is stored in queue 22. The transmission order stored in queue 22 can be obtained in numerous ways, such as in a pre-programmed list, a computer program or interactively. In one embodiment, the list may be transferred or downloaded from another location, such as a personal computer that is directly connected to queue 22 or that is connected to queue 22, for example, via a local area or wide area network including, but not limited to the Internet. In yet another embodiment of the invention, telephone lines may be used to provide the information that is used to control the order in which data is transmitted from data sources 12, 14 16 and 18. In one such embodiment, the user may press the various buttons on the telephone key pad or dial to select numbers that are associated with the different data sources 12, 14, 16 and 18 to designate the order in which data should be transmitted from those sources. In another such embodiment, it may be desired to enable the system to recognize voice commands and convert them to a digital format as provided by sound cards such as those manufactured by Dialogic Corporation, Parsippany, NJ. The addition of such a device may allow a user to state a number that identifies the appropriate data source, or to state one or more words that identify the data that will be transmitted, such as the title, the name or subject of an advertisement. In another embodiment, voice recognition software may be incorporated directly into flow control system 10 to allow the user to issue such voice commands without the use of a Dialogic card. When delivering commands via telephone lines, it may be desired to adapt flow control system 10 to require users to enter a personal identification number or other identifying information in order to prevent unauthorized changes from being made.

Those skilled in the art will recognize that the invention could also be adapted to accommodate the use of cellular telephones, personal digital assistants and other wireless devices.

[0031] In one embodiment of the invention, data control manager 32 communicates with web server 106 to obtain the data that will be stored in source 18. More specifically, data control manager 32 passes parameters that indicate the type of encoder 26 that is connected to flow control system 10, and the application that will be used to deliver the data that is stored in source 18, as well as the duration that will be available for playing the data (i.e. "break length" in the case of an advertisement file), and the type of files (e.g. AVI, WAV) that can be stored. In response, web server 106 provides a list of the names of files that have been previously delivered to the encoder that satisfy the parameters. The actual files may be delivered to encoder 26 in several ways. For example, in one embodiment of the invention, the files are downloaded from web server 106 via a scheduled job. Such a job could run at scheduled intervals to deliver new file.

[0032] As indicated in FIG. 3, once an appropriate signal is received at block 214, flow control system 10 selects an alternate source and passes data from the selected source until the desired amount of data has been delivered to encoder 26. In one embodiment, this portion of the invention operates as shown in FIGS. 5 and 6. First, data control manager 32 sends a command to flow control system 10 to set up queue 22 as indicated in block 402. The various data files that may be delivered by sources 12, 14, 16 and 18 are associated with identifiers, which are typically numerical values. The set up of queue 22 in block 402, typically includes placing the numbers that are associated with these files in the order in which the files are to be delivered to encoder 26. When the appropriate signal is detected in block 214 of FIG. 3, data control

manager 32 sends the name of the file that is associated with the number provided by queue 22 to flow controller 10 at block 406.

[0033] Turning next to FIG. 6, the named file is then loaded from the selected source into a memory linked to encoder 26 at block 408. The file is converted to a format that can be used by encoder 26 as indicated in block 410 and is stored in the encoder 26 memory. The converted data file is passed to the media player at block 412 for display on end user processors 102. A unique data identifier is also passed to data control manager 32 at block 414 to indicate that the requested data has in fact been transmitted to encoder 26. If desired, information about the files that are transmitted to the media player can be used by other applications. For example, the system can be set up so that each time a commercial advertisement is transmitted to the media player, data control manager 32 memorializes the event to create an advertisement log that can be used to show what advertisements have been played.

[0034] Once the designated data has been played by the media player, data control manager 32 will refill queue 22 with new file information and reset it. As stated earlier, the invention may be used to deliver information to a Windows Media Player. These embodiments of the invention will typically carry out file conversion using application programming interfaces that are provided by a software development kit, such as those that are provided by Microsoft Corp. to convert files for use by various media players.

[0035] In one embodiment of the invention, the data that is downloaded from web server 106, stored in source 18 and transmitted to encoder 26 includes commercial advertisements. The assignment and transmission of unique identifiers allows for the tracking of the advertisements, and provides a way to verify that requested advertisements have been played.

[0036] In one embodiment, computer generated files, such as audio video interleaved files and/or a graphics interchange files are stored in source 18. These files may be compressed, for example, to comply with JPEG and/or MPEG standards. It should be noted that the system that is placed between the computer generated data and flow driver 20 may perform "AND" and "OR" operations. Thus, in one embodiment, flow controller 10 may direct flow driver 20 to transmit data from only one source 12, 14, 16 or 18. In such an embodiment, the data from both sources may be passed to flow controller 10, which will dictate which of the two sources should be connected to flow driver 20 for the transmission of data.

[0037] As illustrated in FIG. 7, in another embodiment, flow controller 10 may direct flow driver 20 to simultaneously transmit data from two or more sources 12, 14, 16 or 18. Such an embodiment may, for example, allow an image 44 from a television broadcast to simultaneously be displayed with a symbol 42 such as a logo or a watermark that identifies a sponsor, content provider or other entity that may be associated with the information that is being transmitted. In this embodiment, flow controller 10 may direct flow driver 20 to receive the data from both sources to cause both sources to pass data to encoder 26 simultaneously.

[0038] Referring to FIG. 8, in still another embodiment of the invention, the occurrence of one or more events may be used to initiate the transmission of data from sources 12, 14, 16 and 18. For example, information from a live telecast 46 such as a sports or news event may be transmitted to one or more data sources 12, 14, 16 and 18. Queue 22 may then select the appropriate data source when it receives an appropriate signal (e.g. at the beginning or end of the event), to insert information 48 which may include video clips, still images, reports, highlights, summaries, scores or other information from the event into the video stream. In one embodiment of the invention, breaking news may be fed to one of data sources 12, 14, 16 and 18 along with a

signal that triggers flow control system 10 to immediately transmit the data from the source. A broadcast may then be interrupted to provide the breaking news to the viewer in response to the signal. In another embodiment, video from a sports event may be fed to one of data sources 12, 14, 16 and 18. A signal may be generated to indicate that the event has concluded, to cause queue 22 to select the associated data source when the next (or a designated) signal that is embedded in the broadcast is received, to display the final score and to play a video clip with highlights of the event. Thus, as indicated by these exemplary embodiments of the invention, signals may be assigned different priority levels, to cause some information to interrupt broadcasts when necessary and to allow the system to deliver other information only at regularly scheduled breaks.

[0039] In one embodiment of the invention, tones that are embedded in a broadcast may be detected by data control manager 32 using a hardware based detection procedure. In such an embodiment, a signal may be transmitted to a software component that runs on a device that is external to flow control system 10 when such tones are detected. The software component on this separate piece of hardware may then send a command to data control manager 32 to request playing of the ad designated by queue 22. The command is then forwarded to flow control system 10 which selects and plays the ad. A signal is preferably transmitted to data control manager 32 when flow control system 10 finishes playing the ad, and queue 22 is filled with another ad. In one embodiment, data control manager 32 sends a command to flow control system 10 to cause an ad that was identified during queuing to be played.

[0040] In another embodiment of the invention, a software based tone detection process may be included in flow control system 10 and data control manager 32 may use this process to encode information from the various sources into the composite data stream. In such an

embodiment, tone control software may be loaded into flow control system 10 and the audio and/or video data that has been captured may be analyzed to determine whether any tones are present. A detected tone is interpreted by flow control system 10 as an event (described earlier), which is forwarded to data control manager 32. In response, data control manager 32 may send a command back to flow control system 10 to cause the specified commercial to be played. In this embodiment, data control manager 32 would initially configure flow control system 10 to set up the frequencies that will trigger an event in data control manager 32.

[0041] In another embodiment, encoder 26 may be configured to read signals that identify any or all of the numerous parameters that relate to how the information should be displayed, such as whether the information being transmitted will be displayed in monochrome or in color, whether it includes a monophonic or stereophonic broadcast, the appropriate frame size. etc. In such embodiments, the information that is received by encoder 26 may be routed through the appropriate portion of the circuitry in order to accommodate the requirements that are imposed by these parameters.

[0042] It should be noted that any or all of the above described and similar functions could be incorporated into a single computer, or that these functions may be incorporated in accordance with the choices of Internet users, content providers or others. It should also be noted that any or all of the actions that are conducted by flow control system 10 may be tracked and stored in a file or otherwise provided in a log, in order to assist with billing or other appropriate operations.

[0043] It is, therefore, apparent that there has been provided, in accordance with the present invention, a method and apparatus for delivering a composite information stream to a display. While this invention has been described in conjunction with preferred embodiments

thereof, it is evident that many alternatives, modifications, and variations will be apparent to those skilled in the art. Accordingly, it is intended to embrace all such alternatives, modifications and variations that fall within the spirit and broad scope of the appended claims.

CLAIMS

What Is Claimed Is:

1. A system for delivering a composite information stream over a computer network, comprising:

a media delivery device having a media device driver associated therewith;

a flow control system being independent of and communicating with said media delivery device and with a stored data source, wherein said flow control system is configured to receive data from said media delivery device and from said stored data source, and to control the flow of said media delivery device data and said stored data source; and

an encoder communicating with said flow control system to receive said controlled data flow.

2. A system as claimed in claim 1 further comprising:

an Internet media player which receives said data from said encoder and displays said data on a video monitor using an Internet browser;

a data classifier which associates identifiers with said data;

an identifier recorder which records the passage of a designated type of data to said Internet media player; and

an identifier collector which enters a plurality of said recorded passages into a common data file.

3. A method as claimed in claim 2 wherein said designated type of data is a commercial advertisement, and said common data file is an advertising log.

4. A system as claimed in claim 1 wherein said media delivery device provides live data.

5. A system as claimed in claim 1 wherein said media delivery device provides a television broadcast.

6. A system as claimed in claim 1 wherein said stored data is downloaded from a web server and stored on a computer linked to said encoder.

7. A system as claimed in claim 1 wherein said stored data includes commercial advertisements.

8. A system as claimed in claim 7 wherein said flow control system allows a user to obtain information about content displayed in said commercial advertisements.

9. A system as claimed in claim 8 wherein said flow control system allows a user to order products or services that are associated with said content.

10. A system as claimed in claim 7 wherein said flow control system provides updated information about said media delivery device data.

11. A system as claimed in claim 1 wherein said stored data is located in an audio video interleaved file or a graphics interchange formatted file.

12. A system as claimed in claim 1 wherein said flow control system is located in an electronic unit that is physically separate from said media delivery device.

13. A system as claimed in claim 1, wherein said flow control system is a software module, and further comprising a data control manager software module for passing control instructions to said flow control system.

14. A system as claimed in claim 13, further comprising a queue coupled to said flow control system for passing information related to a desired order of data delivery from said stored data source.

15. A system as claimed in claim 13 wherein said data control manager passes said control instructions via the Internet.

16. A system as claimed in claim 14 wherein said queue is remotely alterable.

17. A system as claimed in claim 16 wherein said queue is altered by transferring information over a computer network.

18. A system as claimed in claim 17 wherein said queue is altered by downloading information from the Internet.

19. A system as claimed in claim 16 wherein said queue is altered by pressing buttons on a telephone key pad.

20. A system as claimed in claim 1 wherein said flow control system monitors said media delivery device data for a control signal, and wherein said flow control system signals said data control manager of receipt of said control signal, and wherein said data control manager controls said flow control manager in response to said control signal.

21. A system as claimed in claim 20 wherein said control signal is an elapsed time.

22. A system as claimed in claim 20 wherein said control signal is embedded in said media delivery device data.

23. A system as claimed in claim 22 wherein said control signal is an audible tone.

24. A system as claimed in claim 1 further comprising a software log of events, said software log being created in response to said controlled data flow, said software log containing a record of the data passed to said encoder from said stored data source by said flow controller.

25. A system as claimed in claim 24 wherein said software log is transferable over the Internet.

26. A system as claimed in claim 1 wherein said media delivery device data is a television broadcast.

27. A system as claimed in claim 1 wherein said stored data is an advertisement.

28. A system as claimed in claim 14 wherein said queue is an advertisement queue.

29. A system as claimed in claim 24 wherein said software log is an advertising log.

30. A system for delivering a composite information stream over a computer network, comprising:

a plurality of data sources; and

a flow control system configured to:

receive data from two or more of said plurality of data sources and from a data control manager,

to selectively control the flow of data received from said plurality of data sources in response to commands from said data control manager, and

to pass said controlled data flow to an encoder as a composite information stream.

31. A system as claimed in claim 30 further comprising:

a media player communicating with said encoder to receive said composite information stream from said encoder;

a data classifier which associates identifiers with said data;

an identifier recorder which records the passage of a designated type of data to said media player; and

an identifier collector which enters a plurality of said recorded passages into a common data file.

32. A method as claimed in claim 31 wherein said designated type of identifier identifies a commercial advertisement, and said common data file is an advertising log.

33. A system as claimed in claim 30 wherein at least one of said plurality of data sources is a live data source and at least one of said data sources is a stored data source, and wherein said flow control system is configured to communicate with a data control manager to selectively pass, in response to commands from said data control manager, data from at least one of said live data sources and from one or more of said at least one stored data sources.

34. A system as claimed in claim 33 further comprising an encoder configured to receive said selectively pass data to transform said received data into a composite data stream.

35. A system as claimed in claim 33 wherein said flow control system includes an electronic queue.

36. A system as claimed in claim 33 wherein said stored data is downloaded from a web server and stored on a computer linked to said encoder.

37. A system as claimed in claim 30 wherein said flow control system includes an electronic queue.

38. A system as claimed in claim 30 wherein at least one of said plurality of data sources provides live data.

39. A system as claimed in claim 38 wherein at least one of said plurality of said data sources includes a video feed.

40. A system as claimed in claim 39 wherein said video feed is a television broadcast.

41. A system as claimed in claim 30 wherein at least one of said plurality of data sources provides stored data.

42. A system as claimed in claim 41 wherein said stored data includes commercial advertisements.

43. A system as claimed in claim 41 wherein said stored data is located in an audio video interleaved file, a graphics interchange formatted file, is located in a file that has been compressed according to joint photographic experts group standards, or is located in a file that has been compressed according to motion picture experts group standards.

44. A system as claimed in claim 41 wherein said stored data is downloaded from a web server and stored on a computer linked to said encoder.

45. A system as claimed in claim 44 wherein said stored data includes commercial advertisements.

46. A system for delivering a composite information stream to an output device, comprising:

a plurality of data sources;

a flow control system which receives data from one or more of said plurality of data sources and selectively passes data from one or more of said plurality of data sources to an encoder; and

a media player which receives said data from said encoder and delivers said data to a video display.

47. A method of delivering a composite information stream over a computer network, comprising:

obtaining data from a plurality of data sources;

receiving control signals from a flow control system interposed between said plurality of data sources and an encoder;

selectively passing data from one or more of said plurality of data sources to said encoder in response to said received control signals;

delivering said selectively passed data to said encoder;

transforming said selectively passed data into a composite data stream; and

delivering said composite data stream to a media player.

48. A method as claimed in claim 47 wherein selectively passing further comprises;

designating an order of transmission of data from two or more of said plurality of data sources;

inserting said data into an information stream in said designated order; and

passing said information stream to said encoder.

49. A method as claimed in claim 47 wherein obtaining said data further comprises:

placing a plurality of data identifiers in an order in accordance with said designated transmission order; and

transferring names of data sets that are associated with said data identifiers to said flow control system in said data identifier order.

50. A method as claimed in claim 49 wherein selectively passing further comprises:

loading a named data set into an encoder; and

transmitting said named data set to a media player.

51. A method as claimed in claim 49 further comprising passing said data identifiers to said flow controller in said data identifier order.

52. A system as claimed in claim 51 further comprising:

recording the passage of an identifier associated with a designated type of named data set to said Internet media player; and

entering a plurality of said recorded passages in a common data file.

53. A method as claimed in claim 52 wherein said designated type of identifier is a commercial advertisement, and said common data file is an advertising log.

54. A method as claimed in claim 47 wherein at least one of said plurality of data sources provides live data.

55. A method as claimed in claim 54 wherein said live data source is a video feed.

56. A method as claimed in claim 55 wherein said video feed is a television broadcast.

57. A method as claimed in claim 47 wherein at least one of said plurality of data sources provides stored data.

58. A method as claimed in claim 57 wherein said stored data resides in an audio video interleaved file, a graphics interchange formatted file, a file that has been compressed according to joint photographic experts group standards or a file that has been compressed according to motion picture expert group standards.

59. A method of delivering a composite information stream over a computer network, comprising:

capturing a first data set;

receiving a request for transmission of at least a second data set;

designating an order of transmission of said first and at least said second data sets; and

controlling the flow of data from said first data set and at least said second data set in accordance with said designated order.

60. A method as claimed in claim 59 further comprising:

delivering said controlled flow to a media player;

associating identifiers with said data;

recording the passage of a designated type of identifier to said media player; and

entering a plurality of said recorded passages in a common data file.

61. A method as claimed in claim 60 wherein said designated type of identifier is a commercial advertisement, and said common data file is an advertising log.

62. A method as claimed in claim 59 wherein said output device is a video monitor.

63. A method as claimed in claim 59 wherein said output device is a personal digital assistant.

64. A method as claimed in claim 59 wherein said order designating step further comprises retrieving a predetermined data transmission order from an electronic queue.

65. A method as claimed in claim 59 wherein at least one of said data sets includes live data.

66. A method as claimed in claim 65 wherein a source of said live data is a video feed.

67. A method as claimed in claim 66 wherein said video feed is a television broadcast.

68. A method as claimed in claim 59 wherein at least one of said data sets delivers stored data.

69. A method as claimed in claim 68 wherein said stored data is in an audio video interleaved file, a graphics interchange formatted file, a file that has been compressed according to joint photographic experts group standards or a file that has been compressed according to motion picture experts group standards.

ABSTRACT

A system and method for delivering a composite information stream over a computer network includes a flow control system that is connected to multiple information sources. The flow control system receives data from two or more of these sources and from a data control manager. The system selectively controls the flow of data that is received from the data sources in response to commands from the data control manager to create the composite information stream. The composite information stream is passed to the encoder, which forwards it to the media player for display at end user processors. In accordance with the invention, commercial advertisements may be inserted into a television broadcast, and transmitted over the Internet to be displayed on a video monitor.

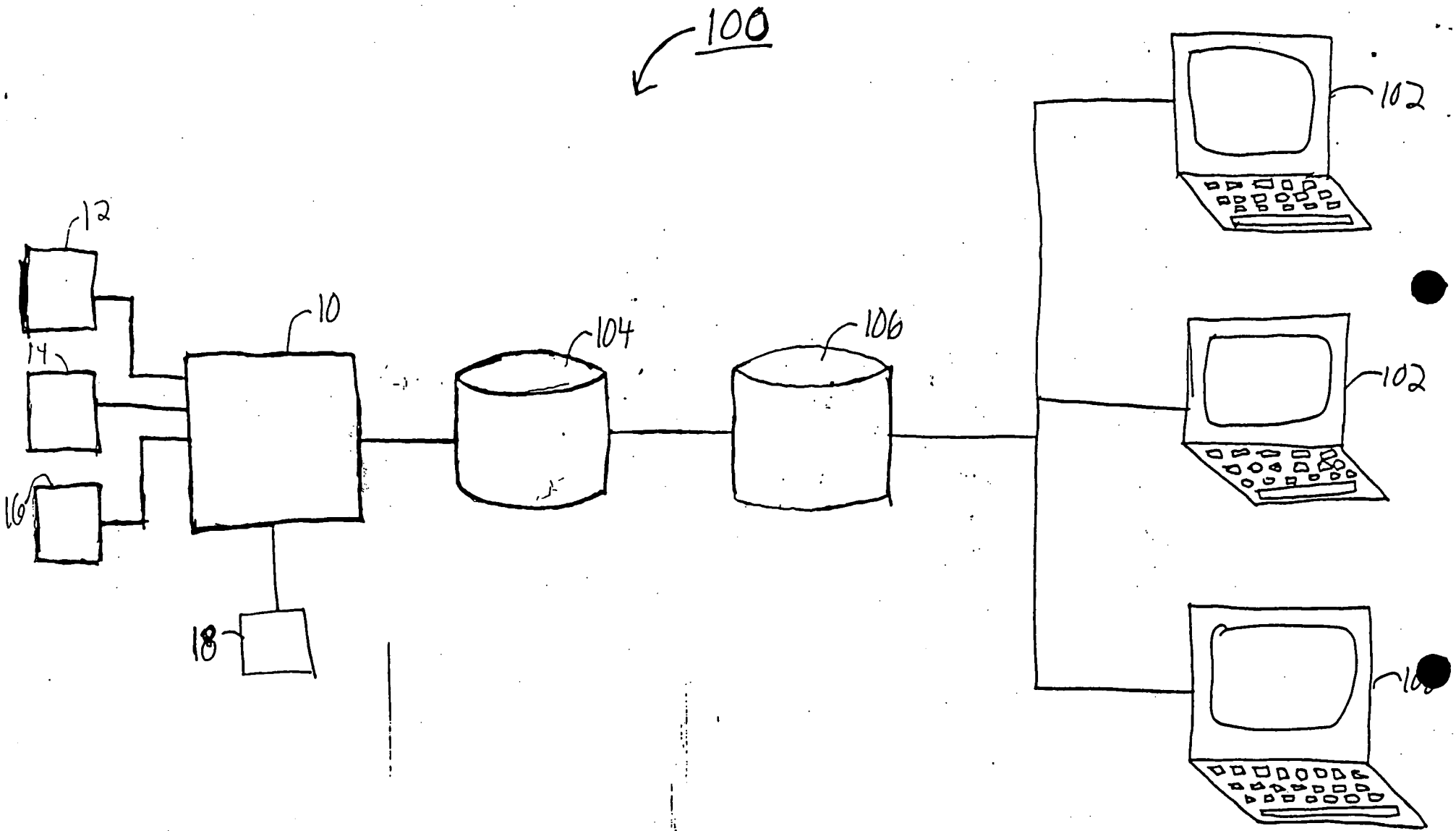


FIG. 1

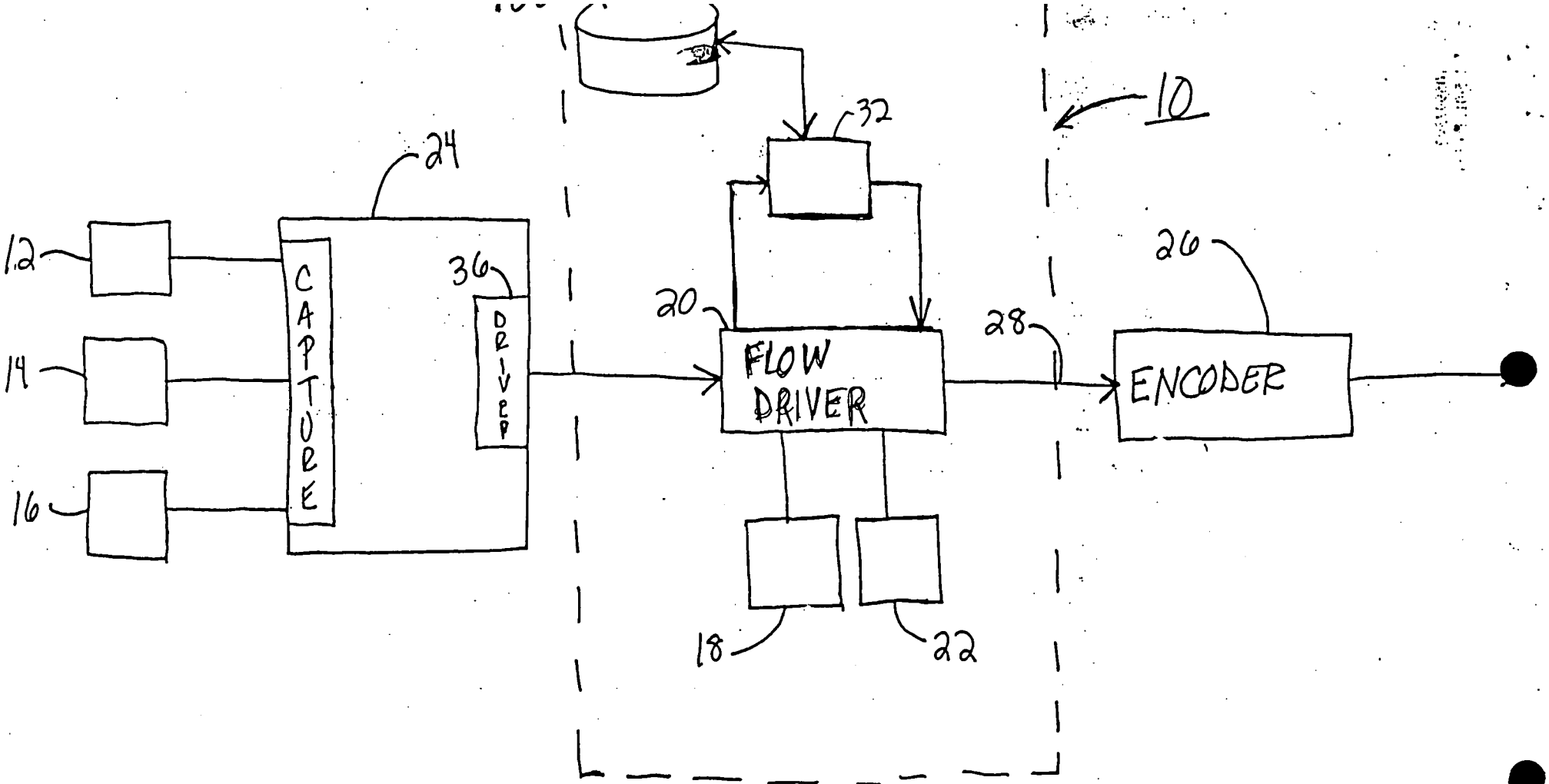

10
12
14
16
24
CAPTURE
36
DRIVER
32
20
FLOW DRIVER
28
26
ENCODER
18
22

FIG. 2

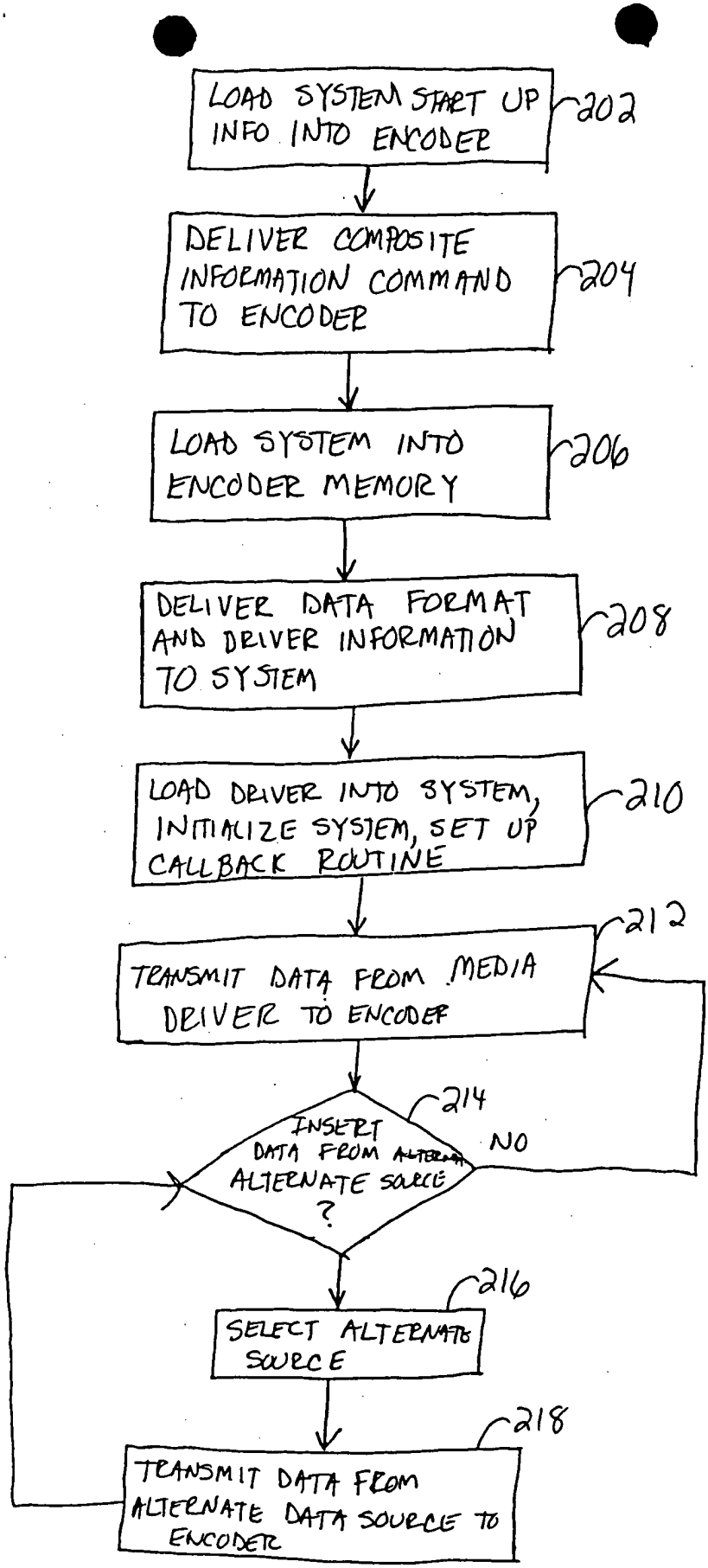

LOAD SYSTEM START UP INFO INTO ENCODER
202
DELIVER COMPOSITE INFORMATION COMMAND TO ENCODER
204
LOAD SYSTEM INTO ENCODER MEMORY
206
DELIVER DATA FORMAT AND DRIVER INFORMATION TO SYSTEM
208
LOAD DRIVER INTO SYSTEM, INITIALIZE SYSTEM, SET UP CALLBACK ROUTINE
210
TRANSMIT DATA FROM MEDIA DRIVER TO ENCODER
212
INSERT DATA FROM ALTERNATE SOURCE ?
214
NO
SELECT ALTERNATE SOURCE
216
TRANSMIT DATA FROM ALTERNATE DATA SOURCE TO ENCODER
218

FIG. 3

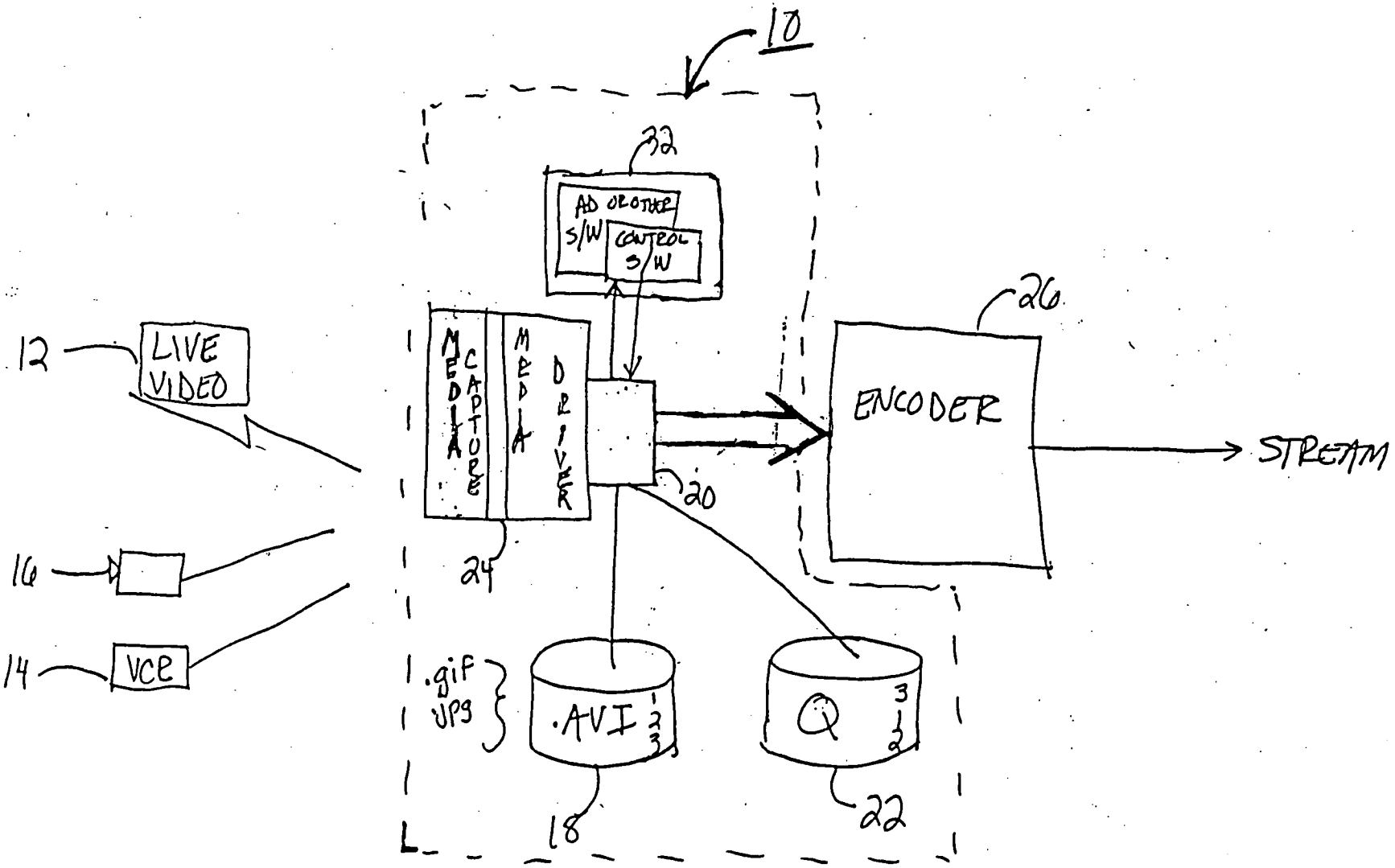

10
32
AD OR OTHER S/W
CONTROL S/W
26
12
LIVE VIDEO
MEDIA CAPTURE
MEDIA DRIVER
ENCODER
STREAM
20
16
24
14
VCE
.gif
JPG
.AVI
Q
18
22

FIG. 4

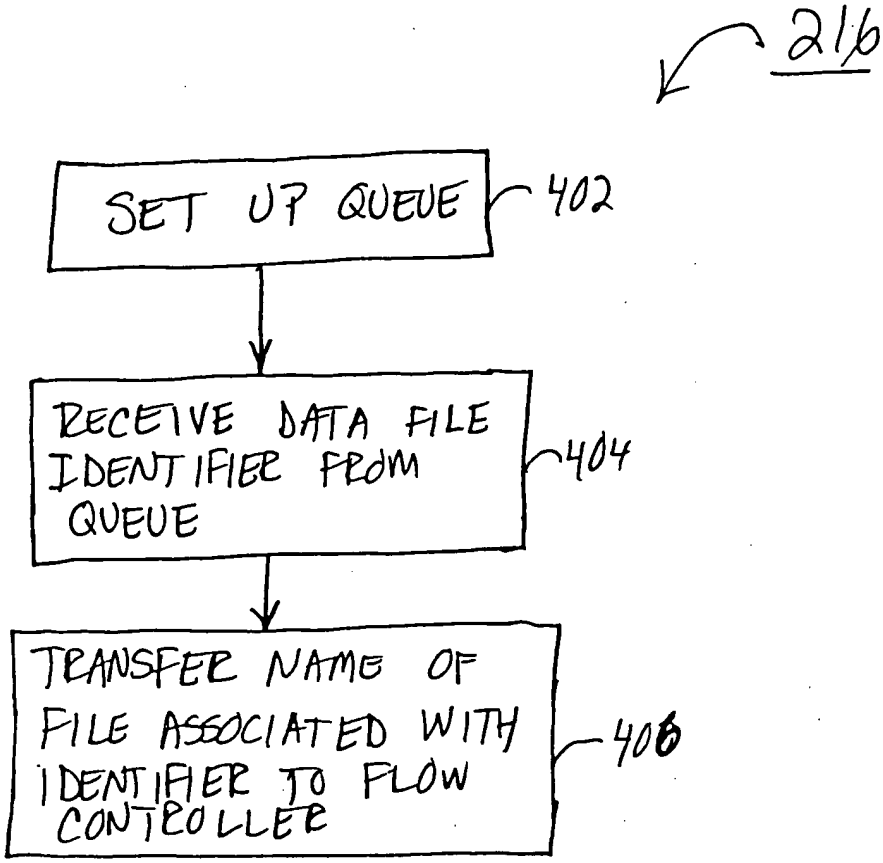

216
SET UP QUEUE
402
RECEIVE DATA FILE IDENTIFIER FROM QUEUE
404
TRANSFER NAME OF FILE ASSOCIATED WITH IDENTIFIER TO FLOW CONTROLLER
406

FIG. 5

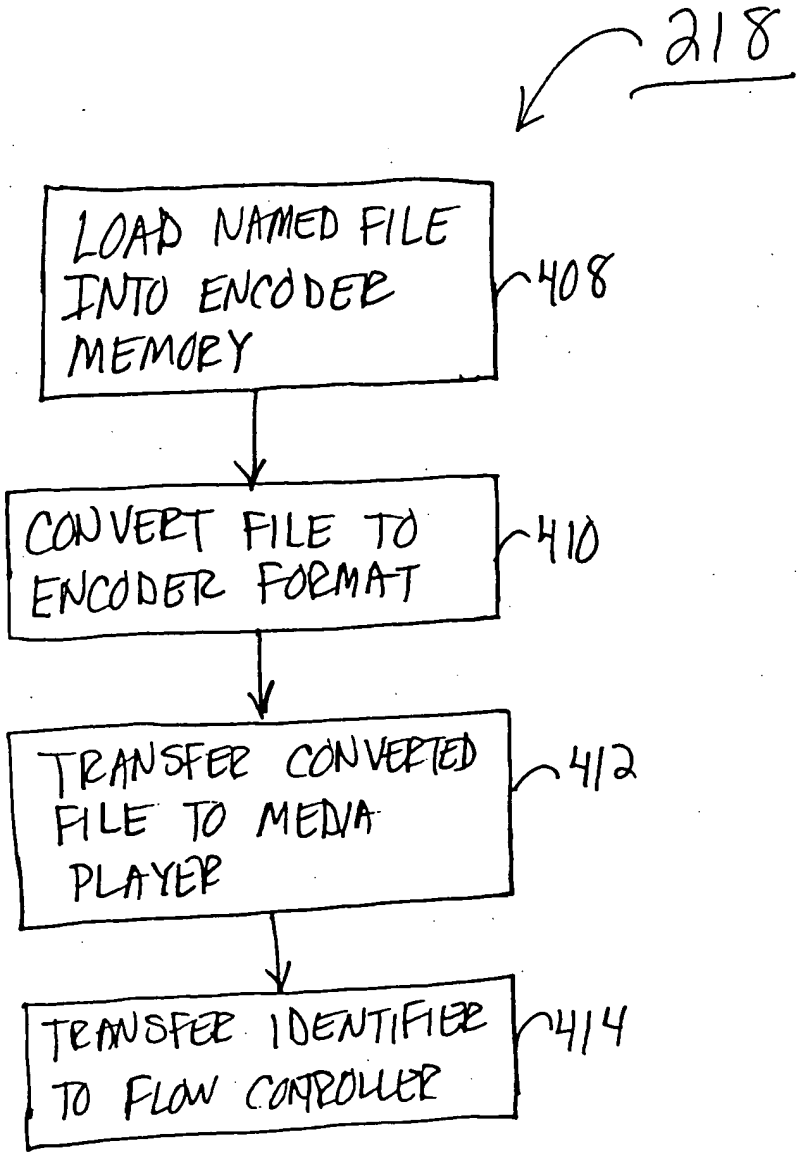

218
LOAD NAMED FILE INTO ENCODER MEMORY
408
CONVERT FILE TO ENCODER FORMAT
410
TRANSFER CONVERTED FILE TO MEDIA PLAYER
412
TRANSFER IDENTIFIER TO FLOW CONTROLLER
414

FIG. 6

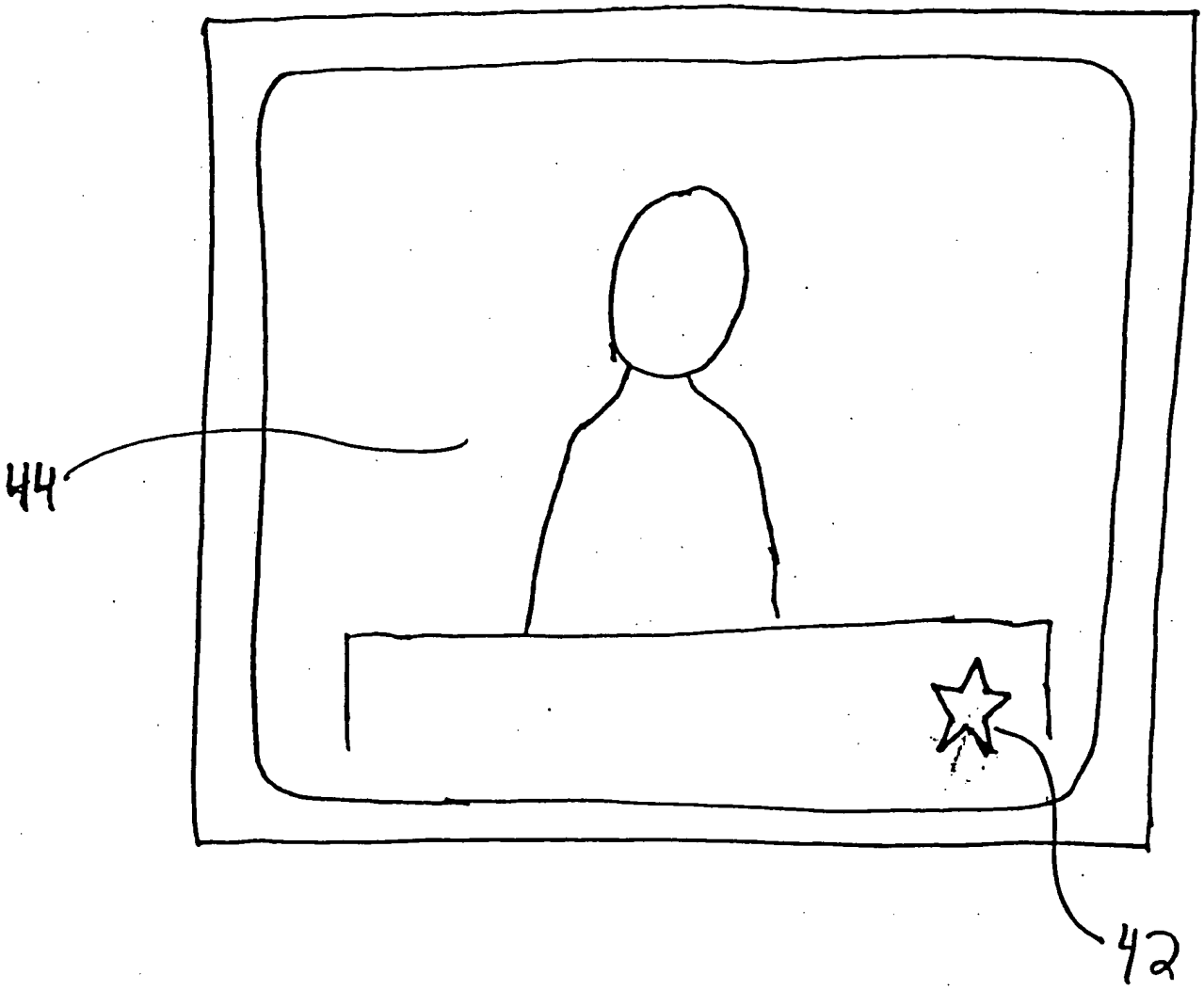


FIG. 7

FIG. 8

[694231/0011]

ASSIGNMENT

WHEREAS, we, **James E. McFaddin**, a citizen of the United States of America, residing at 3021 Filberton, Dallas, Texas, 75229, and **Bhargav Gade**, a citizen of India, residing at 1213 Meadow Creek Drive, Apt. J, Irving, Texas 75038, hereinafter referred to as ASSIGNORS, have invented certain new and useful improvements in a **METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK**, for which we have filed an application for Letters Patents of the United States on May 16, 2001 on Serial No. 09/859,562;

WHEREAS, **YAHOO!, Inc.**, hereinafter referred to as ASSIGNEE, a corporation organized and existing under the laws of the state of Delaware, having a mailing address at 701 First Avenue, Sunnyvale, California 94089, is desirous of obtaining the entire right, title and interest in, to and under the improvements and the application;

NOW, THEREFORE, in consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the ASSIGNORS, have assigned, transferred and set over, and by these presents do hereby assign, transfer and set over, unto the ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the improvements, and the application and all divisions, renewals and continuations thereof, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof, and all applications for Letters

Patent which may hereafter be filed for the improvements in any country or countries foreign to the United States, and all Letters Patent which may be granted for the improvements in any country or countries foreign to the United States and all extensions, renewals and reissues thereof; and we hereby authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for the improvements to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting the improvements, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing and reissue applications, make all rightful oaths and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for the improvements in all countries.

IN TESTIMONY WHEREOF, I have set my hand and seal to this Assignment.

_____, 2001

_____
JAMES E. MCFADDIN

State of)
) ss.:
County of)

On this ____ day of _____, 2001 before me, a Notary Public in and for the State and County aforesaid, personally appeared **JAMES E. MCFADDIN**, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

IN TESTIMONY WHEREOF, I have set my hand and seal to this Assignment.

_____, 2001

_____

BHARGAV GADE

State of)
) ss.:
County of)

On this ____ day of _____, 2001 before me, a Notary Public in and for the State and County aforesaid, personally appeared **BHARGAV GADE**, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

COMBINED DECLARATIONAND POWER OF ATTORNEY FOR PATENT APPLICATION
(Page 1)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled **METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK**, the specification of which was filed on **May 16, 2001** as United States Application No. 09/859,562.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b), of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designates at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed:

Country	Application No	Filed (Day/Mo./Yr.)	Priority Claimed (Yes unless box is checked)
		/ /	☐

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below

Application No	Filed (Day/Mo./Yr.)
	/ /

COMBINED DECLARATIONAND POWER OF ATTORNEY FOR PATENT APPLICATION
(Page 2)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application No.	Filed (Day/Mo./Yr.)	Status (Patented, Pending, Abandoned)
	/ /	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith (list name and registration numbers).

Lawrence Rosenthal, Reg. No. 24,377
Steven B. Pokotilow, Reg. No. 26,405
James J. DeCarlo, Reg. No. 36,120
Matthew W. Siegal, Reg. No. 32,941

Send Correspondence to:

James J. DeCarlo
STROOCK & STROOCK & LAVAN LLP
180 Maiden Lane
New York, New York 10038

Direct Telephone Calls to:

James J. DeCarlo
(212) 806-5400

COMBINED DECLARATIONAND POWER OF ATTORNEY FOR PATENT APPLICATION
(Page 3)

Full Name of First Inventor: **James E. MCFADDIN**

Inventor's signature: _____ Date: _____

Citizen/Subject of: **United States of America**

Residence: **3021 Filberton**
Dallas, Texas 75229

Post Office Address: **P.O. Box 781212**
Dallas, TX 75378

COMBINED DECLARATIONAND POWER OF ATTORNEY
FOR PATENT APPLICATION
(Page 4)

Full Name of First Inventor: **Bhargav GADE**

Inventor's signature: _____ Date: _____

Citizen/Subject of: **India**

Residence: **1213 Meadow Creek Drive, Apt. J**
Irving, TX 75038

Post Office Address: **(Same as Residence)**

CROSS-REFERENCE TO RELATED APPLICATION

[001] This application is a continuation of Application Serial No. 09/859,562, filed May 16, 2001, now pending.

FIELD OF THE INVENTION

[002] This invention relates to a system and apparatus for controlling the flow of data from multiple sources. More specifically, the invention relates to a system and apparatus for automatically combining data from multiple sources to form a composite data stream.

BACKGROUND OF THE INVENTION

[003] Businesses invest a great deal of time and money developing new ways to reach potential customers. One common way that companies provide information about their products and services is to deliver commercials during television broadcasts. In one known method, commercials are simply inserted when there is an audible break in the broadcast. In another embodiment, they are played in response to audible tones that are embedded in the broadcast. For example, in one such method, a 25 Hz tone indicates that a commercial should start and a 35 Hz tone indicates that the commercial should end. Under most circumstances, these commercials are recorded on videocassettes, and loaded into video cassette recorders (VCRs) that have been connected to the broadcast system. An operator, who knows the order in which the commercials should be played, manually starts the appropriate VCR (or other playback device) at the appropriate time.

[004] The tremendous growth in popularity of the Internet has encouraged businesses to use the Worldwide Web to attempt reach potential customers. The development of "streaming media" provides an efficient way to deliver live performances, television broadcasts and similar events to Internet users. Generally speaking, streaming media includes a set of images and

sounds that are sent over the Internet, and played for the viewer in sequence as they arrive. Without streaming media, an Internet user would have to download an entire file before any audio or video could be played. Downloading such a file, which is usually very large, often consumes a substantial amount of time and is typically the source of considerable frustration. The availability of streaming media broadcasts encourages companies to insert advertisements and other information into the media stream as it is delivered to users over the Internet.

[005] The use of audible gaps and tones to trigger the insertion of information into a data stream has the obvious drawbacks that are associated with a system that requires human intervention. While automated systems are available they also have problems. Such systems typically also store commercials and other information on videocassettes, which can be highly inefficient. It often takes a long time to properly position the tape to play the desired message, which makes it difficult to play commercials in any order other than that in which they have been recorded on the tape. Also, videocassettes tend to break and wear out with extended use, which requires the use of backup tapes.

[006] Accordingly, although known apparatus and processes may be suitable for their intended purposes, a need remains for systems and methods for automatically inserting advertisements into a streaming media broadcast.

SUMMARY OF THE INVENTION

[007] The invention is generally directed to a system for controlling the flow of data from multiple sources to generate a composite information stream. In one embodiment, the system includes a plurality of data sources linked to a flow control system. The flow control system is configured to receive data from two or more of said plurality of data sources and from a data control manager, to selectively insert data received from the plurality of data sources into

the data stream in response to commands from the data control manager, and to pass the merged data to an encoder.

[008] In one embodiment, the data includes commercial advertisements. Files that contain the advertisements are downloaded to a computer that is linked to the encoder. The data control manager can also compile a list of the advertisements that have been transmitted to the media player.

[009] Other embodiments of the present invention and features thereof will become apparent from the following detailed description, considered in conjunction with the accompanying drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 illustrates a system that is capable of delivering a composite information stream over a computer network in accordance with an embodiment of the invention.

[0011] FIG. 2 contains a detailed illustration of a flow control system linked to associated hardware in accordance with an embodiment of the invention.

[0012] FIG. 3 is a block diagram that shows one way in which data can be selectively transmitted from multiple sources according to an embodiment of the invention;

[0013] FIG. 4 is a schematic illustration showing a flow driver linked to a flow controller in accordance with an embodiment of the invention;

[0014] FIG. 5 is a block diagram that illustrates in detail the manner in which stored data may be delivered to the flow control system in accordance with one embodiment of the invention;

[0015] FIG. 6 is a block diagram that illustrates in detail the manner in which stored data may be transferred to end user processors in accordance with one embodiment of the invention;

[0016] FIG. 7 illustrates data from multiple sources simultaneously being displayed on a video monitor; and

[0017] FIG. 8 shows how an event can trigger the display of data a video monitor in accordance with the invention.

[0018] While the present invention will be described in connection with certain embodiments thereof, it is to be understood that the invention is not limited to those embodiments. On the contrary, it is intended to cover all alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

[0019] Referring now to the drawings which are provided to describe embodiments of the invention and not by way of limitation, FIG. 1 illustrates schematically, a system 100 which delivers a composite information stream over a computer network, such as the Internet. As used herein, the phrase "composite information stream" refers to a stream of information that could include one or more of several different items or types of data either sequentially or in some simultaneous combination. For example, a composite information stream could include live data from a television broadcast, data that is located on one or more storage devices such as a digital video disc (DVD) player, a video cassette recorder (VCR), a personal computer, various files from a file storage device, etc. or it could include some combination of data from these sources. Thus, for example, the stream could contain live data, then stored data, then live data. While the composite information is described as being part of a "single" stream, those skilled in the art will recognize that the various types of data could be split or duplicated, or that subsets of the data could be combined to generate two or more streams, each of which contains multiple types of data. While the delivery of such information over the Internet is a common use for system 100,

it is to be understood that it could be used to deliver information over a local area network (LAN) wide area network (WAN) or other system.

[0020] System 100 generally includes multiple end user processors 102, a streaming media server 104, a web server 106 and a flow control system 10. As will be described in detail, flow control system 10 communicates with multiple information sources 12, 14, 16 and 18 to insert the data from these sources into a composite information stream. End user processors 102 typically include an Internet browser, such as Internet Explorer or Netscape Navigator, and a streaming media player such as Microsoft Windows Media Player, or Real Networks' Real Player. Various web sites are linked to system 100 by web server 106 for viewing by end users 102. End users 102 may access streaming media and various other forms of content by viewing web sites and selecting various links.

[0021] Turning to FIG. 2, flow control system 10 typically provides an intermediate link between an encoder 26 and a media delivery device 24, and it generally includes various computer executable files. Media delivery device 24 typically includes a capture portion which receives data from one or more input sources and a driver portion which forwards the received information to one or more output sources. In at least one embodiment of the invention, flow control system 10 is an independent module, physically separated from the media delivery device (e.g. in a separate electronic box or unit), yet linked to it to allow communication with at least the driver portion. Exemplary media delivery devices that may be used in accordance with the invention include audio cards such as those manufactured by Crystal Semiconductor, Inc. and Antex Electronics Corp. and video cards such as those manufactured by Osprey Communications, Inc. Encoder 26 is generally of the type that communicates with a streaming media server 104 to transfer an audio and/or video data stream from a radio or television

broadcast to a media player as previously described. In one embodiment of the invention media delivery device 24, flow control system 10 and encoder 26 are located in separate electronic boxes.

[0022] Referring to FIG. 3, delivering a composite information stream to end users 102 in accordance with the invention typically begins by loading startup information in encoder 26 as indicated in block 202. As stated above, the invention may be used with the Microsoft Windows Media Player. In such an embodiment, startup information will typically be provided in a configuration file that identifies the driver that will be used to deliver audio and/or video data from media delivery device 24. The configuration file will identify the device driver 36 that will be used, and may also describe the format in which the data should be delivered to encoder 26.

[0023] A command in the configuration file (which was loaded into the encoder memory at step 204) directs encoder 26 to deliver a composite information stream. Flow control system 10 is then loaded into the encoder memory as shown in block 206. Encoder 26 initializes flow control system 10 and delivers the data format and device driver information that was obtained from the configuration files as shown in block 208. Next, flow control system 10 loads driver 36, initializes it and sets up a callback routine to enable encoder 26 to receive audio and or video data from driver 36 as shown in block 210. Flow control system 10 passes the media data that it receives from driver 36 to encoder 26 at block 212, which forwards the data to the media player at end users processors 102.

[0024] Before data at driver 36 is forwarded by flow control system 10 to encoder 26, flow control system 10 determines from the startup information whether information from one or more alternate sources will be inserted into the media stream as indicated in block 214. More specifically, flow control system 10 continues to pass data from the media delivery device until it

receives a signal that data from an alternate source should be inserted. When such a signal is received, flow control system 10 selects the designated alternate source as indicated in block 216, and passes data from the selected source to encoder 26. The data from this alternate source will be inserted into the data stream until the entire file has been delivered to encoder 26. Once the file has been inserted into the stream, flow control system 10 returns to block 214 to determine whether another alternate source should be selected to transmit another file. If so, the next alternate source is selected and the data is passed from the selected source to encoder 26. This continues until it is determined (i.e. at block 214) that no files from other sources are to be passed to encoder 26. Flow control system 10 then returns to media delivery device 24 and continues to pass data from media driver 36 to encoder 26.

[0025] Returning to FIG. 2, flow control system 10 controls the flow of data from multiple sources to deliver a composite information stream to end users 102. In an embodiment of the invention, two or more data sources 12, 14, 16 and 18 are linked to flow driver 20. As shown, some sources may be linked to flow driver 20 through media delivery device 24 (e.g. sources 12, 14 and 16), while others (e.g. source 18) are linked directly to flow driver 20. Sources 12, 14 and 16 may provide analog data that will be converted to digital data by media delivery device 24, or they may provide digital data that is forwarded to encoder 26 with limited (or no) processing. In contrast, sources such as data source 18 that are directly connected to flow driver 20 will typically be provided in digital form, or include an analog to digital converter or other device that will enable the data to be converted to a digital format prior to its delivery to flow driver 20. While the illustration shows multiple data sources 12, 14 and 16 connected to media delivery device 24 and only a single source 18 connected directly to flow driver 20, it

should be understood that multiple sources could be directly connected to flow driver 20 and/or that a single source could be connected to media delivery device 24.

[0026] When the appropriate signal is received from data control manager 32, flow driver 20 selectively passes data from data sources 12, 14, 16 and 18 to encoder 26. Encoder 26 then returns to media delivery device 24 and continues merging data it provides into the composite stream. The information is then forwarded to the appropriate media player at end user processor 102 and displayed on a video monitor, personal digital assistant screen or other output device.

[0027] As indicated earlier, sources 12, 14, 16 and 18 may include live data, such as, for example, that from a television broadcast and one or more video cassette recorders, digital video disc players, digital satellite systems, and similar devices. Sources 12, 14, 16 and 18 may also include computers and other devices that provide stored data such as audio video interleaved files and graphics interchange files. Signals that trigger flow control system 10 to pass data from one of the additional sources will preferably be embedded or otherwise included in the broadcast. As stated earlier, these may be audible signals, such as tones or beeps, or they may be some other indicator that may be used in accordance with the invention. Signals could be used as they are delivered, or they could be embedded in the broadcast in one format (e.g. as an audible tone), and converted to another format (e.g. an electrical impulse) if desired. While embedded signals are commonly provided, those skilled in the art will recognize from the teachings herein that flow driver 20 could be triggered to vary the transmission source when the signals are provided independently such as, for example, by a timing device, by a computer that has been programmed to generate signals at an appropriate time, or by a manual process.

[0028] While the invention is described herein as delivering information from a single media delivery device 24 at a time, it is to be understood that the invention could be configured

to simultaneously pass data from multiple devices. For example, several encoders 26, each of which is linked to a separate flow control system 10, could be linked to communicate with a single end user processor 102. Different media delivery devices 24 could then communicate with each flow control system to provide different types of data. Such an embodiment of the invention could be used, for example, to deliver a composite information stream that includes data from two or more audio and/or video drivers as well as one or more DVD players and VCRs.

[0029] Also, the output of a single flow control system 10 could be sent to multiple encoders 26, each encoding in a different manner. For example, it is often preferable to encode different types of information at different rates. More specifically, while some end users are connected to the Internet using 28 kbps modems, others are connected using 56 kbps modems. Using known devices, data encoded at different rates would have to be passed to different encoders 26, before they could be displayed on the associated output devices. According to an embodiment of the invention, information that is delivered to flow driver 20 by sources 12, 14, 16 and/or 18 may include signals that identify the appropriate encoding rate. Encoder 26 may be configured to read these signals to encode the data as directed.

[0030] Turning to FIG. 4, flow driver 20 receives various commands from data control manager 32, which is typically an externally located software component. Data control manager 32 is used to designate the order in which data will be received from sources 12, 14, 16 and 18, encoded into a composite stream, and transmitted to end users 102. It should be appreciated that flow control system 10 can be used to combine many types of data for delivery to end users 102 as a composite stream. In one embodiment, flow control system 10 may provide updated information about content in a program that is being broadcast. For example, during a broadcast

of a sports event, flow control system 10 may provide updated statistics about a player or team that is involved in the event. In another embodiment, information that allows a viewer to contact the appropriate source to order products or services that are associated with the program content may be provided. In one embodiment, flow control system 10 inserts commercial advertisements ("ads") into a television broadcast.

[0031] The order in which the connected sources are selected to transmit data is stored in queue 22. The transmission order stored in queue 22 can be obtained in numerous ways, such as in a pre-programmed list, a computer program or interactively. In one embodiment, the list may be transferred or downloaded from another location, such as a personal computer that is directly connected to queue 22 or that is connected to queue 22, for example, via a local area or wide area network including, but not limited to the Internet. In yet another embodiment of the invention, telephone lines may be used to provide the information that is used to control the order in which data is transmitted from data sources 12, 14 16 and 18. In one such embodiment, the user may press the various buttons on the telephone key pad or dial to select numbers that are associated with the different data sources 12, 14, 16 and 18 to designate the order in which data should be transmitted from those sources. In another such embodiment, it may be desired to enable the system to recognize voice commands and convert them to a digital format as provided by sound cards such as those manufactured by Dialogic Corporation, Parsippany, NJ. The addition of such a device may allow a user to state a number that identifies the appropriate data source, or to state one or more words that identify the data that will be transmitted, such as the title, the name or subject of an advertisement. In another embodiment, voice recognition software may be incorporated directly into flow control system 10 to allow the user to issue such voice commands without the use of a Dialogic card. When delivering commands via telephone lines, it may be

desired to adapt flow control system 10 to require users to enter a personal identification number or other identifying information in order to prevent unauthorized changes from being made. Those skilled in the art will recognize that the invention could also be adapted to accommodate the use of cellular telephones, personal digital assistants and other wireless devices.

[0032] In one embodiment of the invention, data control manager 32 communicates with web server 106 to obtain the data that will be stored in source 18. More specifically, data control manager 32 passes parameters that indicate the type of encoder 26 that is connected to flow control system 10, and the application that will be used to deliver the data that is stored in source 18, as well as the duration that will be available for playing the data (i.e. "break length" in the case of an advertisement file), and the type of files (e.g. AVI, WAV) that can be stored. In response, web server 106 provides a list of the names of files that have been previously delivered to the encoder that satisfy the parameters. The actual files may be delivered to encoder 26 in several ways. For example, in one embodiment of the invention, the files are downloaded from web server 106 via a scheduled job. Such a job could run at scheduled intervals to deliver new file.

[0033] As indicated in FIG. 3, once an appropriate signal is received at block 214, flow control system 10 selects an alternate source and passes data from the selected source until the desired amount of data has been delivered to encoder 26. In one embodiment, this portion of the invention operates as shown in FIGS. 5 and 6. First, data control manager 32 sends a command to flow control system 10 to set up queue 22 as indicated in block 402. The various data files that may be delivered by sources 12, 14, 16 and 18 are associated with identifiers, which are typically numerical values. The set up of queue 22 in block 402, typically includes placing the numbers that are associated with these files in the order in which the files are to be delivered to

encoder 26. When the appropriate signal is detected in block 214 of FIG. 3, data control manager 32 sends the name of the file that is associated with the number provided by queue 22 to flow controller 10 at block 406.

[0034] Turning next to FIG. 6, the named file is then loaded from the selected source into a memory linked to encoder 26 at block 408. The file is converted to a format that can be used by encoder 26 as indicated in block 410 and is stored in the encoder 26 memory. The converted data file is passed to the media player at block 412 for display on end user processors 102. A unique data identifier is also passed to data control manager 32 at block 414 to indicate that the requested data has in fact been transmitted to encoder 26. If desired, information about the files that are transmitted to the media player can be used by other applications. For example, the system can be set up so that each time a commercial advertisement is transmitted to the media player, data control manager 32 memorializes the event to create an advertisement log that can be used to show what advertisements have been played.

[0035] Once the designated data has been played by the media player, data control manager 32 will refill queue 22 with new file information and reset it. As stated earlier, the invention may be used to deliver information to a Windows Media Player. These embodiments of the invention will typically carry out file conversion using application programming interfaces that are provided by a software development kit, such as those that are provided by Microsoft Corp. to convert files for use by various media players.

[0036] In one embodiment of the invention, the data that is downloaded from web server 106, stored in source 18 and transmitted to encoder 26 includes commercial advertisements. The assignment and transmission of unique identifiers allows for the tracking of the advertisements, and provides a way to verify that requested advertisements have been played.

[0037] In one embodiment, computer generated files, such as audio video interleaved files and/or a graphics interchange files are stored in source 18. These files may be compressed, for example, to comply with JPEG and/or MPEG standards. It should be noted that the system that is placed between the computer generated data and flow driver 20 may perform "AND" and "OR" operations. Thus, in one embodiment, flow controller 10 may direct flow driver 20 to transmit data from only one source 12, 14, 16 or 18. In such an embodiment, the data from both sources may be passed to flow controller 10, which will dictate which of the two sources should be connected to flow driver 20 for the transmission of data.

[0038] As illustrated in FIG. 7, in another embodiment, flow controller 10 may direct flow driver 20 to simultaneously transmit data from two or more sources 12, 14, 16 or 18. Such an embodiment may, for example, allow an image 44 from a television broadcast to simultaneously be displayed with a symbol 42 such as a logo or a watermark that identifies a sponsor, content provider or other entity that may be associated with the information that is being transmitted. In this embodiment, flow controller 10 may direct flow driver 20 to receive the data from both sources to cause both sources to pass data to encoder 26 simultaneously.

[0039] Referring to FIG. 8, in still another embodiment of the invention, the occurrence of one or more events may be used to initiate the transmission of data from sources 12, 14, 16 and 18. For example, information from a live telecast 46 such as a sports or news event may be transmitted to one or more data sources 12, 14, 16 and 18. Queue 22 may then select the appropriate data source when it receives an appropriate signal (e.g. at the beginning or end of the event), to insert information 48 which may include video clips, still images, reports, highlights, summaries, scores or other information from the event into the video stream. In one embodiment of the invention, breaking news may be fed to one of data sources 12, 14, 16 and 18 along with a

signal that triggers flow control system 10 to immediately transmit the data from the source. A broadcast may then be interrupted to provide the breaking news to the viewer in response to the signal. In another embodiment, video from a sports event may be fed to one of data sources 12, 14, 16 and 18. A signal may be generated to indicate that the event has concluded, to cause queue 22 to select the associated data source when the next (or a designated) signal that is embedded in the broadcast is received, to display the final score and to play a video clip with highlights of the event. Thus, as indicated by these exemplary embodiments of the invention, signals may be assigned different priority levels, to cause some information to interrupt broadcasts when necessary and to allow the system to deliver other information only at regularly scheduled breaks.

[0040] In one embodiment of the invention, tones that are embedded in a broadcast may be detected by data control manager 32 using a hardware based detection procedure. In such an embodiment, a signal may be transmitted to a software component that runs on a device that is external to flow control system 10 when such tones are detected. The software component on this separate piece of hardware may then send a command to data control manager 32 to request playing of the ad designated by queue 22. The command is then forwarded to flow control system 10 which selects and plays the ad. A signal is preferably transmitted to data control manager 32 when flow control system 10 finishes playing the ad, and queue 22 is filled with another ad. In one embodiment, data control manager 32 sends a command to flow control system 10 to cause an ad that was identified during queuing to be played.

[0041] In another embodiment of the invention, a software based tone detection process may be included in flow control system 10 and data control manager 32 may use this process to encode information from the various sources into the composite data stream. In such an

embodiment, tone control software may be loaded into flow control system 10 and the audio and/or video data that has been captured may be analyzed to determine whether any tones are present. A detected tone is interpreted by flow control system 10 as an event (described earlier), which is forwarded to data control manager 32. In response, data control manager 32 may send a command back to flow control system 10 to cause the specified commercial to be played. In this embodiment, data control manager 32 would initially configure flow control system 10 to set up the frequencies that will trigger an event in data control manager 32.

[0042] In another embodiment, encoder 26 may be configured to read signals that identify any or all of the numerous parameters that relate to how the information should be displayed, such as whether the information being transmitted will be displayed in monochrome or in color, whether it includes a monophonic or stereophonic broadcast, the appropriate frame size. etc. In such embodiments, the information that is received by encoder 26 may be routed through the appropriate portion of the circuitry in order to accommodate the requirements that are imposed by these parameters.

[0043] It should be noted that any or all of the above described and similar functions could be incorporated into a single computer, or that these functions may be incorporated in accordance with the choices of Internet users, content providers or others. It should also be noted that any or all of the actions that are conducted by flow control system 10 may be tracked and stored in a file or otherwise provided in a log, in order to assist with billing or other appropriate operations.

[0044] It is, therefore, apparent that there has been provided, in accordance with the present invention, a method and apparatus for delivering a composite information stream to a display. While this invention has been described in conjunction with preferred embodiments

thereof, it is evident that many alternatives, modifications, and variations will be apparent to those skilled in the art. Accordingly, it is intended to embrace all such alternatives, modifications and variations that fall within the spirit and broad scope of the appended claims.

CLAIMS

What Is Claimed Is:

1. A system for delivering a composite information stream over a computer network, comprising:

a media delivery device having a media device driver associated therewith;

a flow control system being independent of and communicating with said media delivery device and with a stored data source, wherein said flow control system is configured to receive data from said media delivery device and from said stored data source, and to control the flow of said media delivery device data and said stored data source; and

an encoder communicating with said flow control system to receive said controlled data flow.

2. A system as claimed in claim 1 further comprising:

an Internet media player which receives said data from said encoder and displays said data on a video monitor using an Internet browser;

a data classifier which associates identifiers with said data;

an identifier recorder which records the passage of a designated type of data to said Internet media player; and

an identifier collector which enters a plurality of said recorded passages into a common data file.

3. A method as claimed in claim 2 wherein said designated type of data is a commercial advertisement, and said common data file is an advertising log.

4. A system as claimed in claim 1 wherein said media delivery device provides live data.

5. A system as claimed in claim 1 wherein said media delivery device provides a television broadcast.

6. A system as claimed in claim 1 wherein said stored data is downloaded from a web server and stored on a computer linked to said encoder.

7. A system as claimed in claim 1 wherein said stored data includes commercial advertisements.

8. A system as claimed in claim 7 wherein said flow control system allows a user to obtain information about content displayed in said commercial advertisements.

9. A system as claimed in claim 8 wherein said flow control system allows a user to order products or services that are associated with said content.

10. A system as claimed in claim 7 wherein said flow control system provides updated information about said media delivery device data.

11. A system as claimed in claim 1 wherein said stored data is located in an audio video interleaved file or a graphics interchange formatted file.

12. A system as claimed in claim 1 wherein said flow control system is located in an electronic unit that is physically separate from said media delivery device.

13. A system as claimed in claim 1, wherein said flow control system is a software module, and further comprising a data control manager software module for passing control instructions to said flow control system.

14. A system as claimed in claim 13, further comprising a queue coupled to said flow control system for passing information related to a desired order of data delivery from said stored data source.

15. A system as claimed in claim 13 wherein said data control manager passes said control instructions via the Internet.

16. A system as claimed in claim 14 wherein said queue is remotely alterable.

17. A system as claimed in claim 16 wherein said queue is altered by transferring information over a computer network.

18. A system as claimed in claim 17 wherein said queue is altered by downloading information from the Internet.

19. A system as claimed in claim 16 wherein said queue is altered by pressing buttons on a telephone key pad.

20. A system as claimed in claim 1 wherein said flow control system monitors said media delivery device data for a control signal, and wherein said flow control system signals said data control manager of receipt of said control signal, and wherein said data control manager controls said flow control manager in response to said control signal.

21. A system as claimed in claim 20 wherein said control signal is an elapsed time.

22. A system as claimed in claim 20 wherein said control signal is embedded in said media delivery device data.

23. A system as claimed in claim 22 wherein said control signal is an audible tone.

24. A system as claimed in claim 1 further comprising a software log of events, said software log being created in response to said controlled data flow, said software log containing a record of the data passed to said encoder from said stored data source by said flow controller.

25. A system as claimed in claim 24 wherein said software log is transferable over the Internet.

26. A system as claimed in claim 1 wherein said media delivery device data is a television broadcast.

27. A system as claimed in claim 1 wherein said stored data is an advertisement.

28. A system as claimed in claim 14 wherein said queue is an advertisement queue.

29. A system as claimed in claim 24 wherein said software log is an advertising log.

30. A system for delivering a composite information stream over a computer network, comprising:

a plurality of data sources; and

a flow control system configured to:

receive data from two or more of said plurality of data sources and from a data control manager,

to selectively control the flow of data received from said plurality of data sources in response to commands from said data control manager, and

to pass said controlled data flow to an encoder as a composite information stream.

31. A system as claimed in claim 30 further comprising:

a media player communicating with said encoder to receive said composite information stream from said encoder;

a data classifier which associates identifiers with said data;

an identifier recorder which records the passage of a designated type of data to said media player; and

an identifier collector which enters a plurality of said recorded passages into a common data file.

32. A method as claimed in claim 31 wherein said designated type of identifier identifies a commercial advertisement, and said common data file is an advertising log.

33. A system as claimed in claim 30 wherein at least one of said plurality of data sources is a live data source and at least one of said data sources is a stored data source, and wherein said flow control system is configured to communicate with a data control manager to selectively pass, in response to commands from said data control manager, data from at least one of said live data sources and from one or more of said at least one stored data sources.

34. A system as claimed in claim 33 further comprising an encoder configured to receive said selectively pass data to transform said received data into a composite data stream.

35. A system as claimed in claim 33 wherein said flow control system includes an electronic queue.

36. A system as claimed in claim 33 wherein said stored data is downloaded from a web server and stored on a computer linked to said encoder.

37. A system as claimed in claim 30 wherein said flow control system includes an electronic queue.

38. A system as claimed in claim 30 wherein at least one of said plurality of data sources provides live data.

39. A system as claimed in claim 38 wherein at least one of said plurality of said data sources includes a video feed.

40. A system as claimed in claim 39 wherein said video feed is a television broadcast.

41. A system as claimed in claim 30 wherein at least one of said plurality of data sources provides stored data.

42. A system as claimed in claim 41 wherein said stored data includes commercial advertisements.

43. A system as claimed in claim 41 wherein said stored data is located in an audio video interleaved file, a graphics interchange formatted file, is located in a file that has been compressed according to joint photographic experts group standards, or is located in a file that has been compressed according to motion picture experts group standards.

44. A system as claimed in claim 41 wherein said stored data is downloaded from a web server and stored on a computer linked to said encoder.

45. A system as claimed in claim 44 wherein said stored data includes commercial advertisements.

46. A system for delivering a composite information stream to an output device, comprising:

a plurality of data sources;

a flow control system which receives data from one or more of said plurality of data sources and selectively passes data from one or more of said plurality of data sources to an encoder; and

a media player which receives said data from said encoder and delivers said data to a video display.

47. A method of delivering a composite information stream over a computer network, comprising:

obtaining data from a plurality of data sources;

receiving control signals from a flow control system interposed between said plurality of data sources and an encoder;

selectively passing data from one or more of said plurality of data sources to said encoder in response to said received control signals;

delivering said selectively passed data to said encoder;

transforming said selectively passed data into a composite data stream; and

delivering said composite data stream to a media player.

48. A method as claimed in claim 47 wherein selectively passing further comprises;

designating an order of transmission of data from two or more of said plurality of data sources;

inserting said data into an information stream in said designated order; and

passing said information stream to said encoder.

49. A method as claimed in claim 47 wherein obtaining said data further comprises:

placing a plurality of data identifiers in an order in accordance with said designated transmission order; and

transferring names of data sets that are associated with said data identifiers to said flow control system in said data identifier order.

50. A method as claimed in claim 49 wherein selectively passing further comprises:

loading a named data set into an encoder; and

transmitting said named data set to a media player.

51. A method as claimed in claim 49 further comprising passing said data identifiers to said flow controller in said data identifier order.

52. A system as claimed in claim 51 further comprising:

recording the passage of an identifier associated with a designated type of named data set to said Internet media player; and

entering a plurality of said recorded passages in a common data file.

53. A method as claimed in claim 52 wherein said designated type of identifier is a commercial advertisement, and said common data file is an advertising log.

54. A method as claimed in claim 47 wherein at least one of said plurality of data sources provides live data.

55. A method as claimed in claim 54 wherein said live data source is a video feed.

56. A method as claimed in claim 55 wherein said video feed is a television broadcast.

57. A method as claimed in claim 47 wherein at least one of said plurality of data sources provides stored data.

58. A method as claimed in claim 57 wherein said stored data resides in an audio video interleaved file, a graphics interchange formatted file, a file that has been compressed according to joint photographic experts group standards or a file that has been compressed according to motion picture expert group standards.

59. A method of delivering a composite information stream over a computer network, comprising:

capturing a first data set;

receiving a request for transmission of at least a second data set;

designating an order of transmission of said first and at least said second data sets; and

controlling the flow of data from said first data set and at least said second data set in accordance with said designated order.

60. A method as claimed in claim 59 further comprising:

delivering said controlled flow to a media player;

associating identifiers with said data;

recording the passage of a designated type of identifier to said media player; and

entering a plurality of said recorded passages in a common data file.

61. A method as claimed in claim 60 wherein said designated type of identifier is a commercial advertisement, and said common data file is an advertising log.

62. A method as claimed in claim 59 wherein said output device is a video monitor.

63. A method as claimed in claim 59 wherein said output device is a personal digital assistant.

64. A method as claimed in claim 59 wherein said order designating step further comprises retrieving a predetermined data transmission order from an electronic queue.

65. A method as claimed in claim 59 wherein at least one of said data sets includes live data.

66. A method as claimed in claim 65 wherein a source of said live data is a video feed.

67. A method as claimed in claim 66 wherein said video feed is a television broadcast.

68. A method as claimed in claim 59 wherein at least one of said data sets delivers stored data.

69. A method as claimed in claim 68 wherein said stored data is in an audio video interleaved file, a graphics interchange formatted file, a file that has been compressed according to joint photographic experts group standards or a file that has been compressed according to motion picture experts group standards.

ABSTRACT

A system and method for delivering a composite information stream over a computer network includes a flow control system that is connected to multiple information sources. The flow control system receives data from two or more of these sources and from a data control manager. The system selectively controls the flow of data that is received from the data sources in response to commands from the data control manager to create the composite information stream. The composite information stream is passed to the encoder, which forwards it to the media player for display at end user processors. In accordance with the invention, commercial advertisements may be inserted into a television broadcast, and transmitted over the Internet to be displayed on a video monitor.

FIG. 1

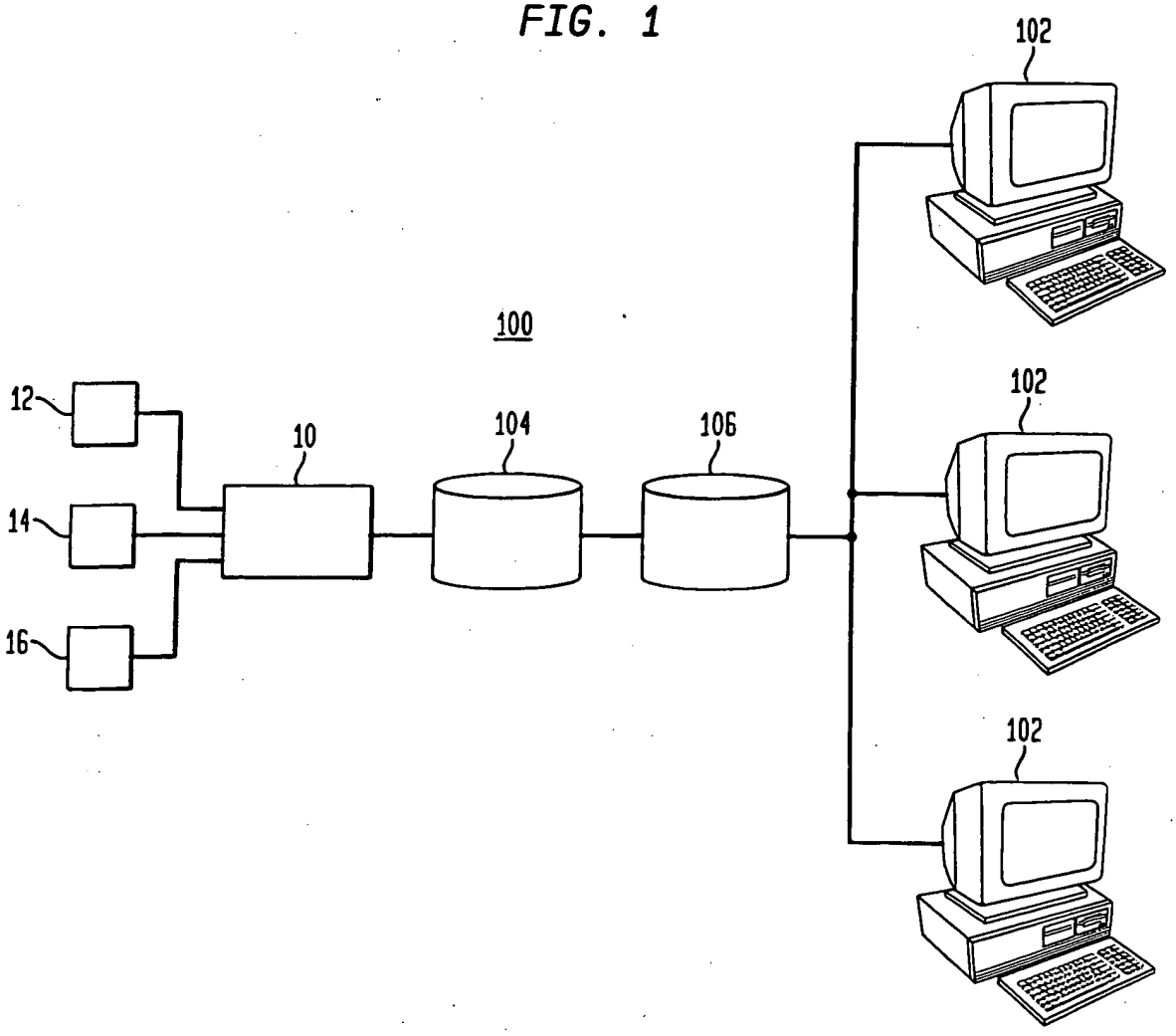


FIG. 2

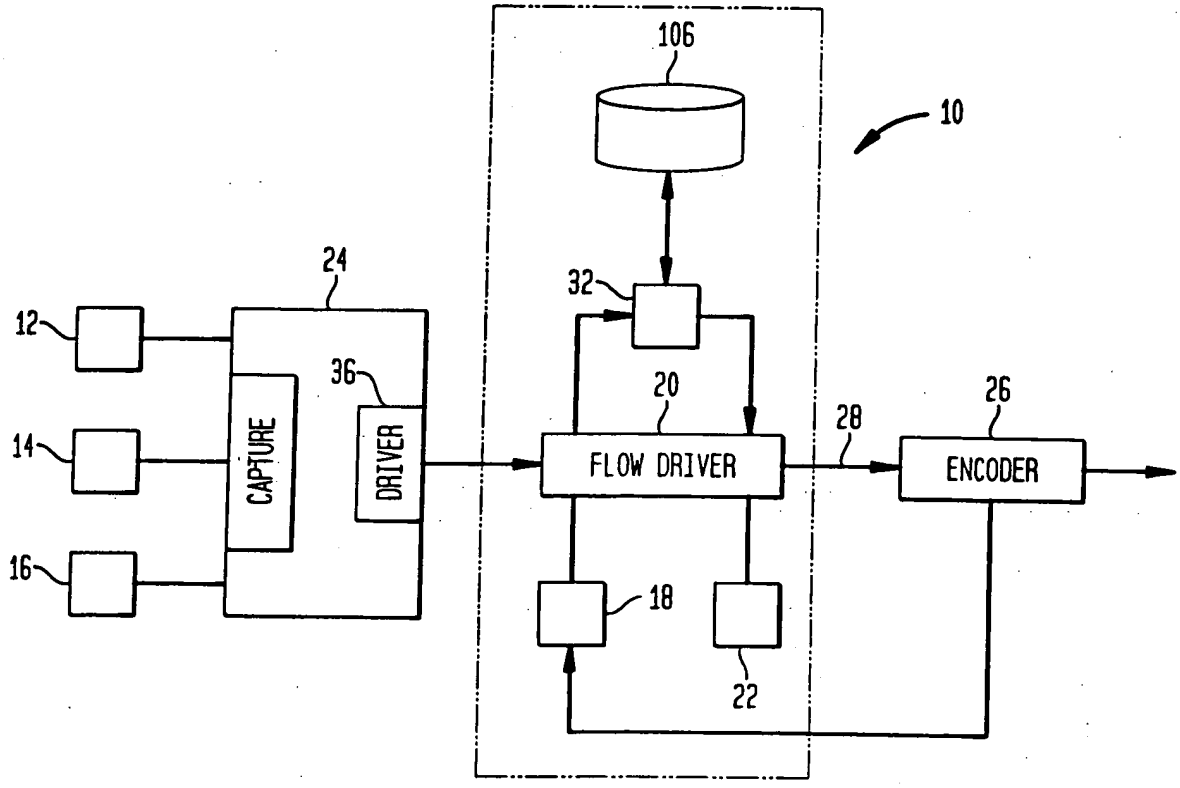

106
10
24
32
12
36
20
26
28
14
CAPTURE
DRIVER
FLOW DRIVER
ENCODER
16
18
22

FIG. 3

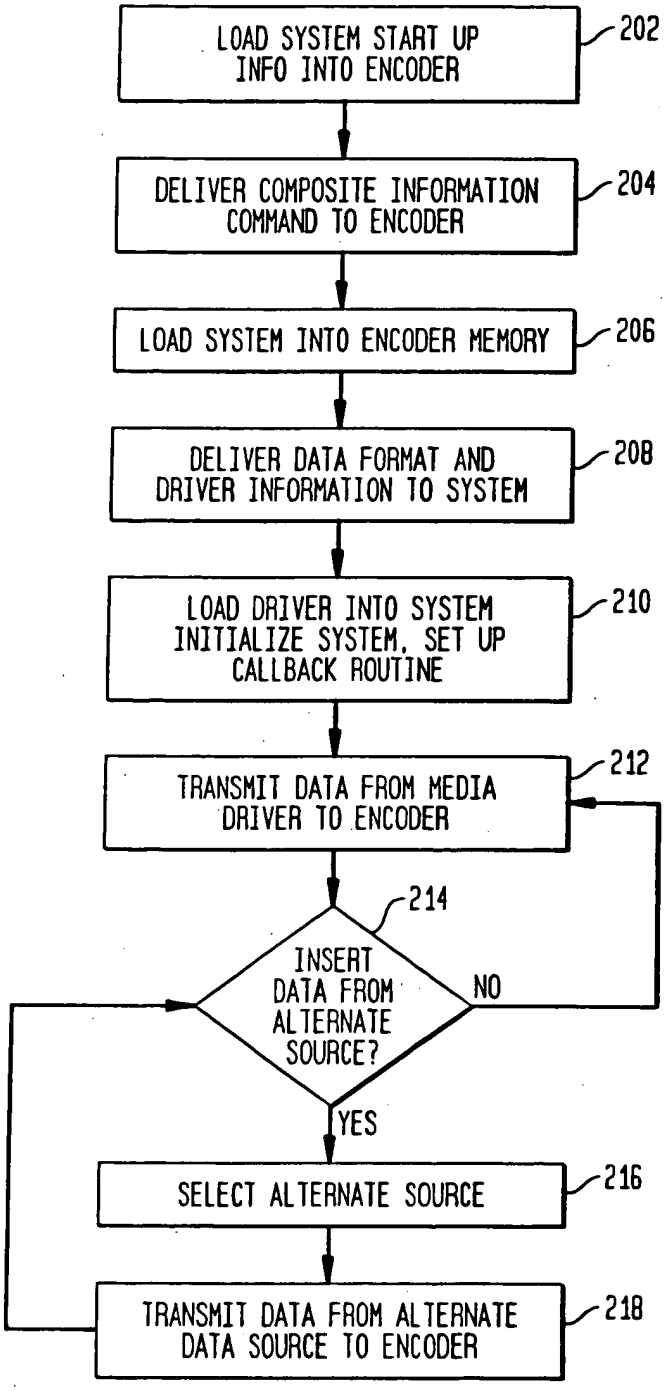

LOAD SYSTEM START UP INFO INTO ENCODER
202
DELIVER COMPOSITE INFORMATION COMMAND TO ENCODER
204
LOAD SYSTEM INTO ENCODER MEMORY
206
DELIVER DATA FORMAT AND DRIVER INFORMATION TO SYSTEM
208
LOAD DRIVER INTO SYSTEM INITIALIZE SYSTEM, SET UP CALLBACK ROUTINE
210
TRANSMIT DATA FROM MEDIA DRIVER TO ENCODER
212
214
INSERT DATA FROM ALTERNATE SOURCE?
NO
YES
SELECT ALTERNATE SOURCE
216
TRANSMIT DATA FROM ALTERNATE DATA SOURCE TO ENCODER
218

FIG. 4

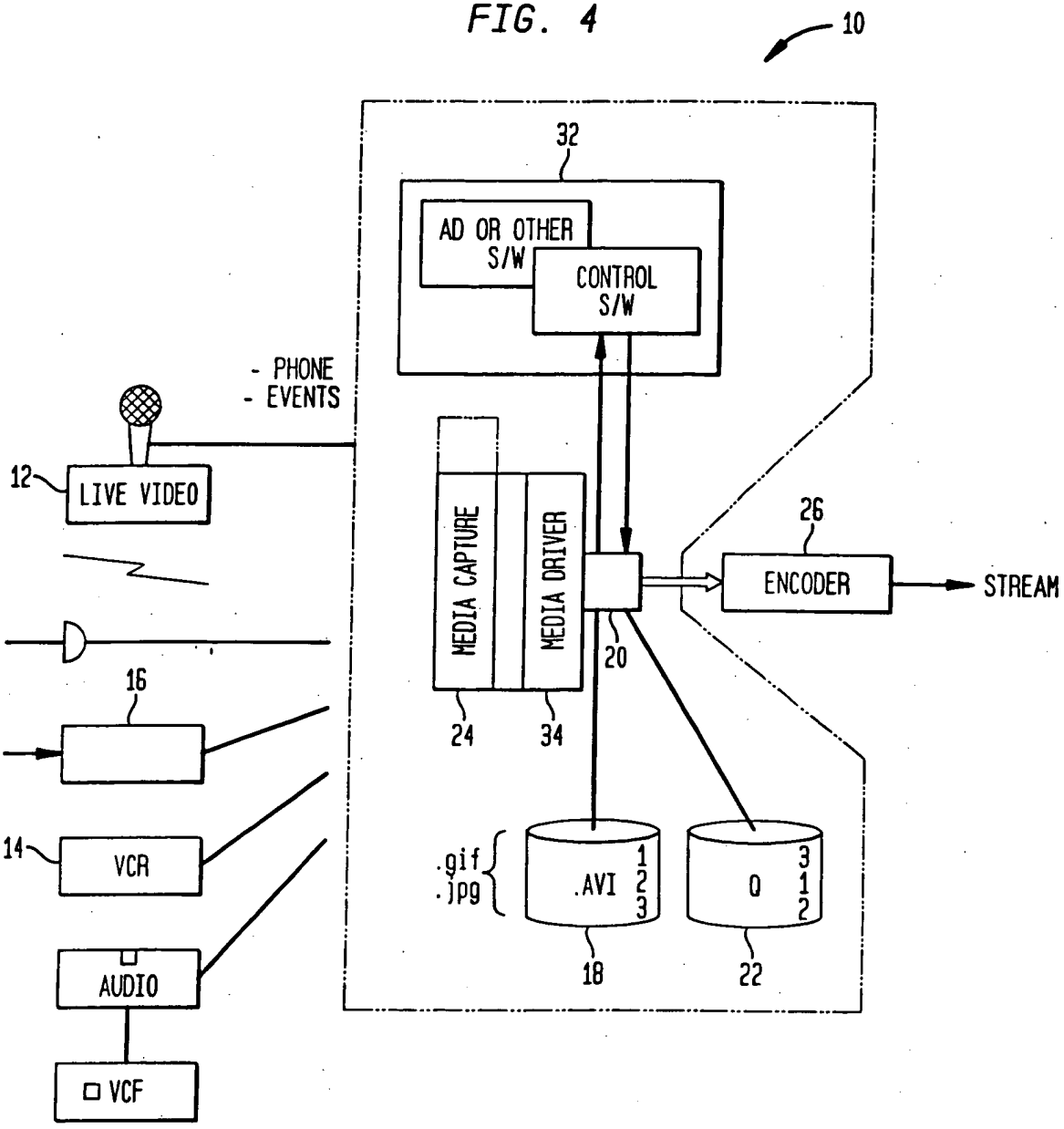

10
32
AD OR OTHER S/W
CONTROL S/W
- PHONE
- EVENTS
12
LIVE VIDEO
MEDIA CAPTURE
MEDIA DRIVER
26
ENCODER
STREAM
20
16
24
34
14
VCR
.gif
.jpg
.AVI
1
2
3
Q
3
1
2
AUDIO
VCF
18
22

FIG. 5

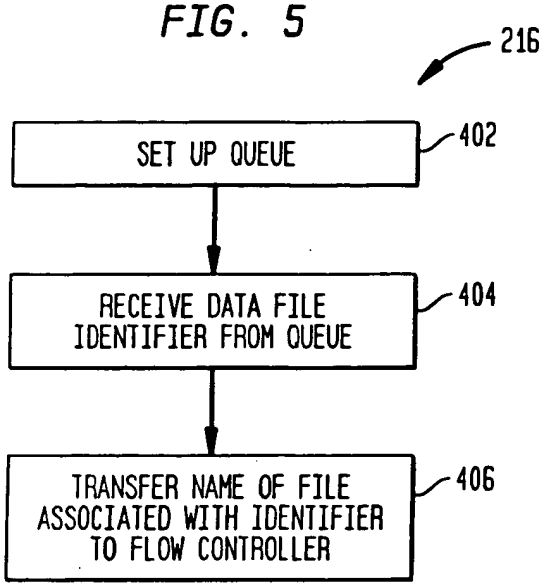

216
SET UP QUEUE
402
RECEIVE DATA FILE IDENTIFIER FROM QUEUE
404
TRANSFER NAME OF FILE ASSOCIATED WITH IDENTIFIER TO FLOW CONTROLLER
406

FIG. 6

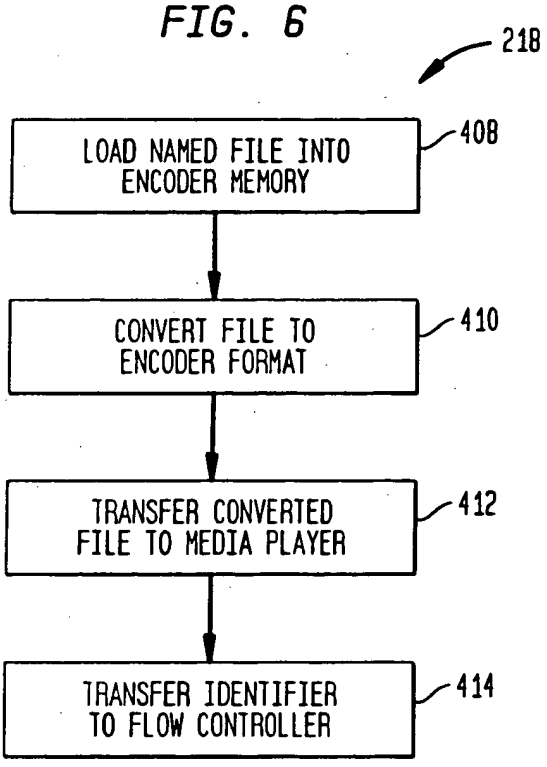

218
LOAD NAMED FILE INTO ENCODER MEMORY
408
CONVERT FILE TO ENCODER FORMAT
410
TRANSFER CONVERTED FILE TO MEDIA PLAYER
412
TRANSFER IDENTIFIER TO FLOW CONTROLLER
414

FIG. 7

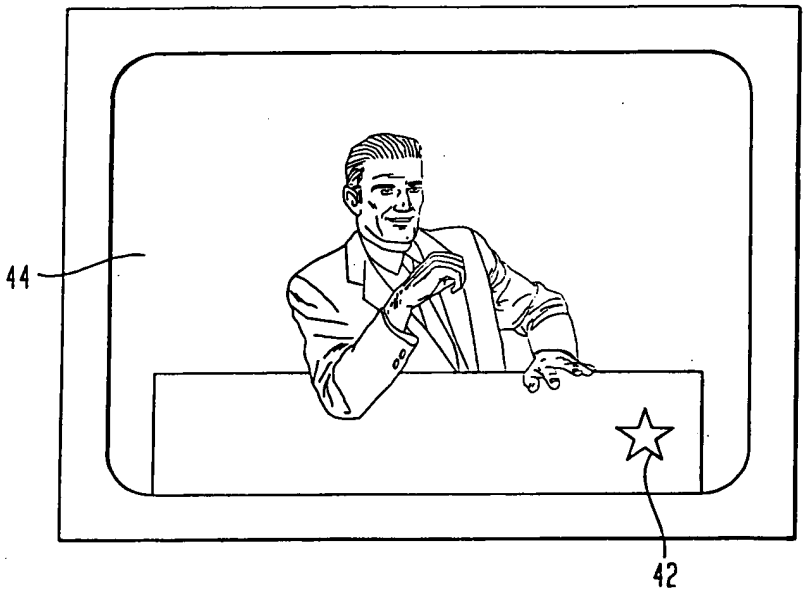
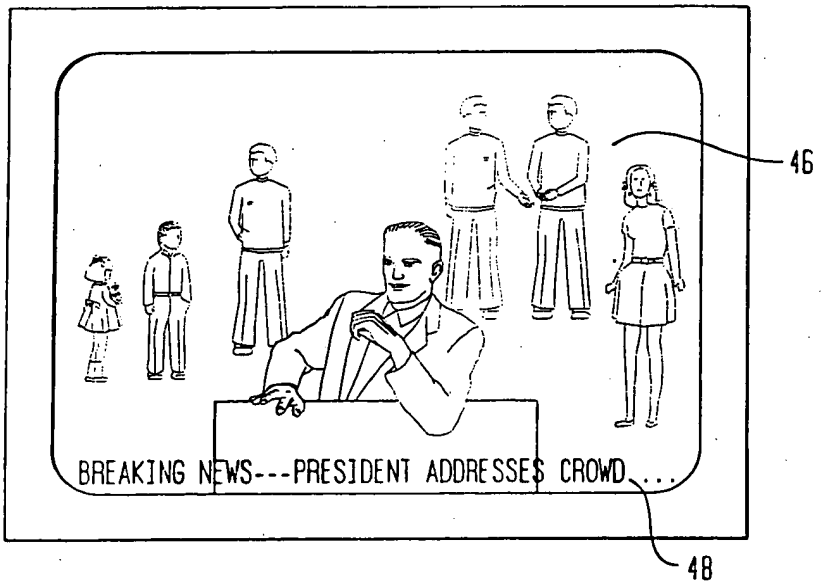


FIG. 8



COMBINED DECLARATIONAND POWER OF ATTORNEY FOR PATENT APPLICATION
(Page 1)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled **METHOD AND SYSTEM FOR DELIVERING A COMPOSITE INFORMATION STREAM OVER A COMPUTER NETWORK**, the specification of which was filed on February 14, 2002, as United States Patent Application Number 10,077,282.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b), of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designates at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed:

Country	Application No	Filed (Day/Mo./Yr.)	Priority Claimed (Yes unless box is checked)
		/ /	☐

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below

Application No	Filed (Day/Mo./Yr.)
	/ /

COMBINED DECLARATIONAND POWER OF ATTORNEY FOR PATENT APPLICATION
(Page 2)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application No.	Filed (Day/Mo./Yr.)	Status (Patented, Pending, Abandoned)
09/859,562	**05/16/2001**	**Abandoned**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith (list name and registration numbers).

Lawrence Rosenthal, Reg. No. 24,377
Steven B. Pokotilow, Reg. No. 26,405
James J. DeCarlo, Reg. No. 36,120
Matthew W. Siegal, Reg. No. 32,941

Send Correspondence to:

James J. DeCarlo
STROOCK & STROOCK & LAVAN LLP
180 Maiden Lane
New York, New York 10038

Direct Telephone Calls to:

James J. DeCarlo
(212) 806-5400

COMBINED DECLARATIONAND POWER OF ATTORNEY
FOR PATENT APPLICATION
(Page 3)

Full Name of First Inventor: **James E. MCFADDIN**
Inventor's signature: _____ Date: _____
Citizen/Subject of: **USA**
Residence: **3021 Filberton**
Dallas, Texas 75229
Post Office Address: **P.O. Box 781212**
Dallas, TX 75378

Full Name of Second Inventor: **Justin Paul MADISON**
Inventor's signature: _____ Date: _____
Citizen/Subject of: **USA**
Residence: **201 Black Walnut**
Garland, Texas 75044
Post Office Address: **Same as above**

Full Name of Third Inventor: **Michael David BIGBY**
Inventor's signature: _____ Date: _____
Citizen/Subject of: **USA**
Residence: **2354 Pauline Dr.**
San Jose, California 95124
Post Office Address: **Same as above**